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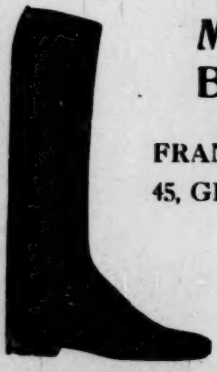

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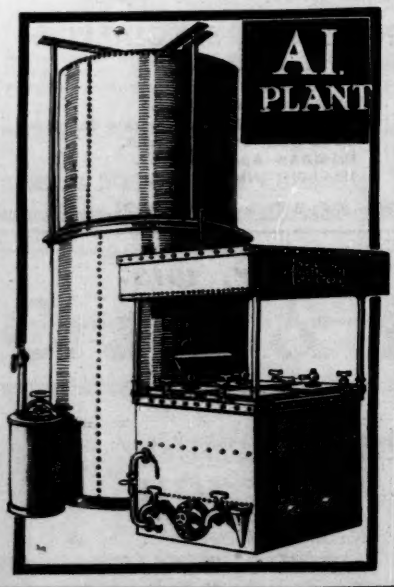

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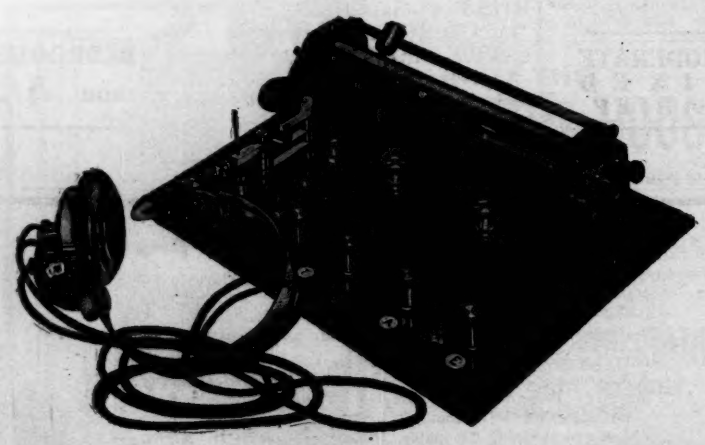

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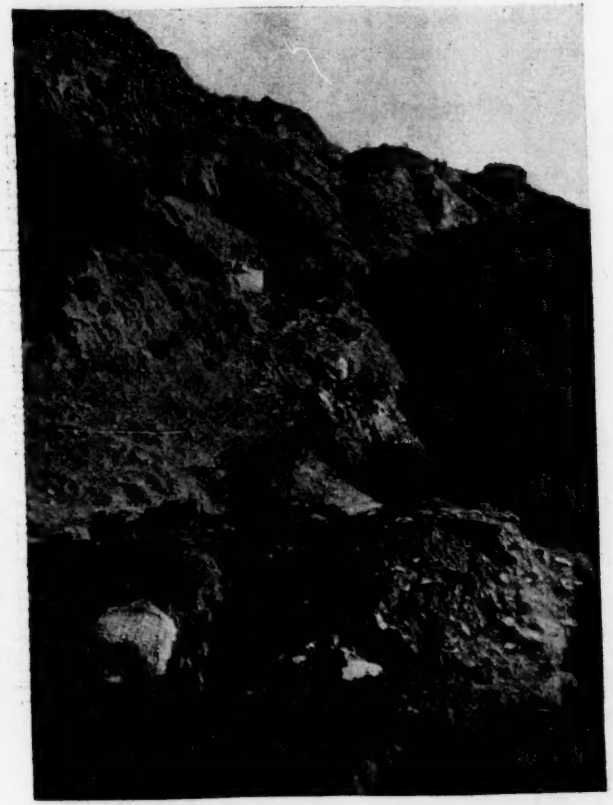
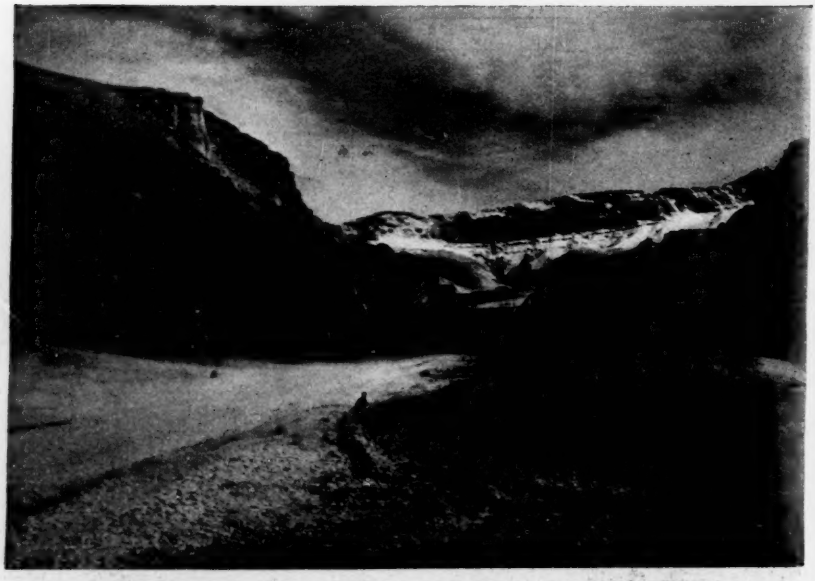


KUMARIJ KOTAL ON THE BUSHIRE—SHIRAZ ROAD.

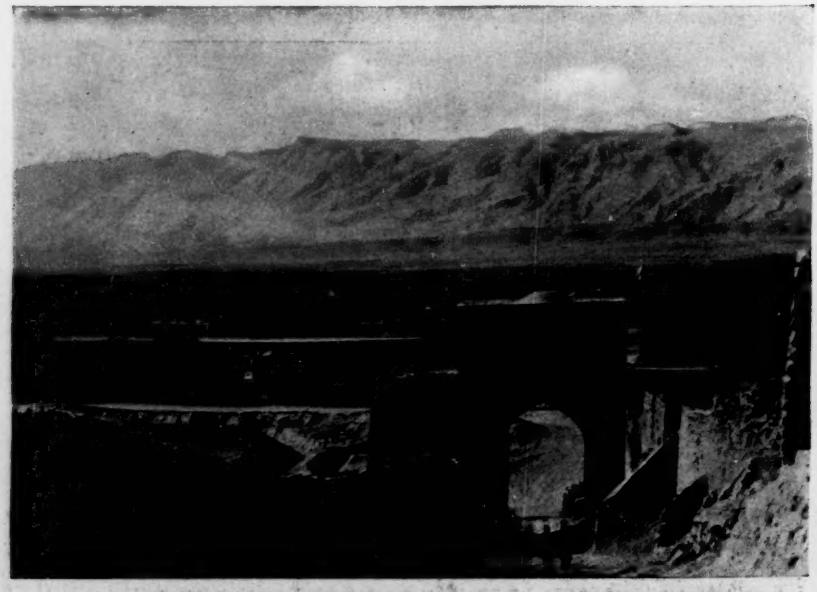
[*Photographs lent by a member of the R.U.S.I.*]

[*See page* 4.]



THE ISPAHAN ROAD—THROUGH KORAN GATE, SHIRAZ.

[Taken just outside the Gate in winter.]



VIEW OF SHIRAZ FROM KORAN GATE (ISPAHAN ROAD) IN SUMMER.

[Photographs lent by a member of the R.U.S.I.]

[See page 4.]

ERRATA.

In the JOURNAL for December, 1912, page 1649, in the title to the lecture on "The Employment of War Dogs," Major Richardson should have been described as "late Notts. and Derbyshire Regiment."

Page 1721 "The Von Löbell Reports, 1911," under Military Bridging, line 14, for "chassis" read "chesses."

ROYAL UNITED SERVICE INSTITUTION.

JANUARY, 1913.

SECRETARY'S NOTES.

I.—OFFICERS JOINED.

The following officers joined the Institution during the month of December, 1912, *viz.* :—

Colonel W. R. Clifford (h.p.), late Cheshire Regiment.
Captain G. F. Phillips, Duke of Cornwall's Light Infantry.
Lieutenant F. V. Holt, Oxfordshire and Buckinghamshire Light Infantry.
Captain A. R. G. Gordon, Royal Irish Regiment.
Lieutenant F. E. Byrne, R.N.
Lieutenant R. E. Wilson, R.A.
Lieutenant J. B. H. Woodcock, Pembroke Yeomanry.
Captain R. W. Harling, late Connaught Rangers.
Captain J. H. Gibbon, R.F.A.
Sub-Lieutenant R. H. V. Buxton, R.N.
Lieutenant W. J. Whitworth, R.N.
Lieutenant J. W. L. Sprot, The Royal Highlanders.
Captain O. H. Delano-Osborne, Royal Scots Fusiliers.

II. MEMBERSHIP.

The Council have pleasure in reporting that during the past year 232 officers joined the Institution (against 261 in 1911).

There were 121 withdrawals and 106 deaths (of whom 35 were Life Members), making an increase of 5 on the year.

The details of members joining were :—

Regular Army	155
Territorial Force (including Yeomanry)	32
Royal Navy	28
Special Reserve	8
India and Colonial Volunteers	7
Royal Marines	1
Royal Naval Reserve	1
Total	232

III.—THE WAR GAME.

The Council has arranged that sets of maps and pieces for holding a War Game can be lent to any Regular, Special Reserve and Territorial Unit, or recognized Society of the same, at a fee of 10s. per occasion, the Unit or Society paying carriage both ways and making good any loss or damage incurred. Umpires, assistant umpires, schemes and all other arrangements to be made by the parties engaged. Should it be desired a room at the Institution can be placed at the disposal of the players after 5 p.m., at a charge of 10s. per evening, but not less than a week's notice should be given in respect of it.

IV.—IMPORTANT "NEW STANDING ORDER."

The Council has recently passed the following standing order: "A Member in arrear with his annual subscription after March 31st of each year, shall not be entitled to use the Institution buildings, receive the JOURNAL, or participate in any of the privileges accorded to Members."

V.—ADDITIONS TO THE MUSEUM.

(3385). Officer's Shako of the 1st Durham Militia, 1852.—Deposited by Lieutenant G. C. Darwall, Royal Canadian Regiment.

(6517). An Engraving of the Emperor Napoleon I. in his state robes, from the painting by Isabey. The ornamentation round the engraving is by Fragonard.

(6518). Officer's Shako Plate of the 2nd Warwickshire Militia, as worn from 1855 to 1862.—Given by Captain H. M. McCance, late the Royal Scots.

(6519). Five Sketches in water colour of the Fort of Mooltan (N.W. India), by Lieutenant J. L. Heathorn, 3rd Madras Light Infantry, dated 1849. Here in 1848 Moolraj Sing, the ruler of the Sikhs, treacherously murdered Mr. Van Agnew and Lieutenant Anderson. The City was taken by the British after a protracted siege on January 22nd, 1849.—Given by W. S. Coutts, Esq.

VI.—LECTURES.

The following Lectures have been arranged:—

Wednesday, January 15th.	"The Georgian Bay Canal from a Military and Imperial Standpoint." By McLeod Stewart, Esq., M.A. (Ex-Mayor of Ottawa). General Sir E. P. Leach, V.C., K.C.B., K.C.V.O., in the chair.
Wednesday, January 22nd.	"Railway Systems of West Africa." By Captain H. O. Mance, D.S.O., R.E.
Wednesday, February 12th.	"The Organization and Training of British Cavalry." By Major C. L. Graham, 4th Q. O. Hussars.
Wednesday, February 19th.	"Aeronautical Progress." By Colonel J. D. Fullerton, R.E. (retired).
Wednesday, February 26th.	"The Balkan War and its Lessons." By Colonel C. B. Mayne, R.E. (retired). Major-General W. R. Robertson, C.V.O., C.B., D.S.O., Commandant of the Staff College, in the chair.
Tuesday, March 4th. 4 p.m.	Anniversary Meeting. To receive the Annual Report, Election of New Members to the Council, and announcement of the Gold Medal Essayist, 1912.
Wednesday, March 12th.	"Benedek in 1866." By Professor H. Spenser Wilkinson, M.A.

Wednesday, March 19th. "A National Cadet Army." By Captain J. Atkinson, 1st Hants Cadet Battalion.

Wednesday, April 2nd. "Secrecy and Discussion during Peace Time as aids to preparation for War." By Commander Carlyon Bellairs, R.N.

PRINCIPAL ADDITIONS TO LIBRARY.

December, 1912.

George the First's Army, 1714—1727. Vol. II. By Charles Dalton. Imp. 8vo. 21s. Illustrated. (Presented by the Publishers) (Eyre & Spottiswoode, Ltd.). London, 1912.

The People's Army—National Military Service Made Easy. By Lieutenant E. Hammond Foot, R.E. (S.R.). Crown 8vo. 2s. Illustrated. (Presented by the Author). (Gale & Polden). London, 1912.

Analysis of the British Campaign in Afghanistan, 1878—1880. With Strategic and Tactical Comments. By T. Miller Maguire. 8vo. (Presented by the Author). (C. Harmsworth & Co.). London, 1905.

Lord Roberts' Message to the Nation. By Field-Marshal Earl Roberts. 8vo. 6d. (Presented by the Publisher) (John Murray). London, 1912.

The Battle of the North Sea in 1914. By "Searchlight." 8vo. 1s. (Presented by the Publishers) (Hugh Rees, Ltd.). London, 1912.

Records of the 3rd Battalion The Duke of Wellington's (West Riding) Regiment, formerly 6th West York Militia. The Halifax Militia (including Companies of Volunteer Militia, formed under Act 34, George III.), 1760—1910. Compiled by Captain N. H. Moore. 8vo. Illustrated. (Presented by the Author). (Gale & Polden, Ltd.). London, 1910.

West Indian Tales of Old. By Algernon E. Aspinall. Crown 8vo. Illustrated. (Presented by the Publishers) (Duckworth & Co.). London, 1912.

Co-operation Between Infantry and Artillery, and the Best Means of Attaining It. By Lieut.-Colonel E. F. Hale, Commanding 31st Brigade R.F.A. (Aldershot Military Society). Pamphlet. 6d. Hugh Rees, Ltd.). London, 1912.

Morocco in Diplomacy. By E. D. Morel. Crown 8vo. 6s. (Smith, Elder & Co.). London, 1912.

History and Campaigns of the Rifle Brigade, Part I., 1800—1809. By Colonel Willoughby Verner. 4to. 25s. Illustrated. (Presented by the Publishers) (John Bale, Sons & Danielsson). London, 1912.

Bacon's Excelsior Map of the Mediterranean Lands. Scale, 64.2 miles = 1 inch. (Presented by Lieut.-Colonel F. R. Maunsell, C.M.G.). London, 1912.

The Campaign of 1805—Ulm and Austerlitz. By Dr. T. Miller Maguire. 8vo. 2s. 6d. (Presented by the Publishers) (William Clowes & Sons, Ltd.). London, 1912.

Under the Old Flag—Recollections of Military Operations in the War for the Union, the Spanish War, the Boxer Rebellion, etc. By Brevet Major-General J. H. Wilson, U.S.A. 2 Vols. 8vo. 24s. (D. Appleton & Co.). New York and London, 1912.

THE BUSHIRE—SHIRAZ ROAD.

The Frontispiece for this month shows portions of the Bushire—Shiraz road, a route which is now attracting attention owing to the recent murder of a British officer near Shiraz (see page 127). A description of the route, by an officer who had recently traversed it in winter, was published in the JOURNAL for March, 1912 (pp. 455-459), from which the following extracts are reprinted :—

At Daliki we entered the hills, and did not leave them, except to cross valleys between one range and the next, until we reached Shiraz. The road was an extremely rough mule track at first, up and down hills, and then following the bed of a small stream down to the Daliki river, the latter was crossed by a six-arched stone bridge, approached by a causeway of rough cobble stones. After crossing the bridge the road follows the bank of the river a short way, and then, turning off, comes suddenly to the "Cursed Kotal," the first of the four *kotals* between Bushire and Shiraz. This *kotal* is larger, though not so steep as the others, but there is little to choose between them as regards the track, which is as bad for animals as it could possibly be. Up the steepest part of this *kotal* for about a mile there is a made road, paved with the usual rough cobble stones, which is of some assistance to mules making the ascent, but too steep for them to keep their footing when coming down. . . . .

At the top of the *kotal,* the track crosses a plain about five miles broad, with the village and rest house of Konar Takhteh in the middle, and then enters the hills again, and winds about for some miles till it reaches the second or Kumarij Kotal, called after the village at its head. This is much shorter, though steeper than the former one, and the road is equally bad, but from the top of it one obtains a very fine view of the flat plain of Kumarij just below, about five miles square, and almost all under cultivation. . . . . .

Kazarun is quite a fair-sized Persian town, surrounded with gardens, and the biggest place between Bushire and Shiraz. . . . . .

From Kazarun the road continues up the valley for about nine miles, then, turning to the left, it winds up the Kotal i Dukhtar (or Daughter's Pass). From near the top of this *kotal,* which is the shortest and steepest of the four, a very fine view of the Kazarun Valley is obtained. On the top of this *kotal* the road enters a forest of oak trees, from which it emerges at the foot of the last *kotal,* the Pir i Zan (or Old Woman's Pass). This pass is a climb of over five miles, and though the road is very bad, it is nowhere nearly as steep as the other *kotals.* . . . . The Caravanserai of Mian Kotal is situated on a small flat plateau about two miles up the pass. In this day's march we had risen over 2,000 feet, and passed from spring to the depths of winter. . . . . .

We left Mian Kotal at 1.15 a.m., and reached Dasht i Arjin (11 miles) by about 9.30 a.m., just in time, as the sun was already beginning to soften the frozen crust of snow; the top of the pass is 7,400 feet above the sea level. From Dasht i Arjin to Kan i Zinian, and thence to Shiraz, the road presented no further difficulties; snow was lying to within two miles of Shiraz, but it was no longer of any great depth. . . . . .

At about eight miles from Shiraz the track emerges from the hills on to the Shiraz Plain, towards the further side of which is the town itself, looking like a large Indian bazaar, and surrounded on all sides by the gardens for which it is famous.

THE JOURNAL
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VOL. LVII. JANUARY, 1913. NO. 419.

[Authors alone are responsible for the contents of their respective Papers.]

IRELAND AND NATIONAL DEFENCE.

By MAJOR-GENERAL E. S. MAY, C.B., C.M.G.

On Wednesday, 4th December, 1912.

LIEUT-GENERAL J. H. BOR, C.B., C.M.G., Chairman of the Council, in the Chair.

THE STRATEGICAL IMPORTANCE OF IRELAND TO ENGLAND.

I DO not propose to lay before you to-day any very close or lengthy exposition of the importance from the strategical standpoint that the possession of Ireland is to England. In the first place, the time at my disposal this afternoon does not allow of it, and in the second, so much has recently been written on the subject that those I have the honour to address, are probably familiar with this aspect of the question, and will scarcely dispute my assertion that Ireland, not firmly in our grasp, would constitute a menace to our security which would be intolerable. Intolerable, that is to say, from the standpoint of the strategical influence as regards our trade routes with which her geographical situation endows Ireland, but also—as I hope presently to show—from the aspect of peace strategy, or that branch of the science which deals with the provision and preparation of our forces for war. As regards the first standpoint, if there were any need to do so, I could fortify myself with the opinion of Dumouriez, who more than a hundred years ago pointed to Ireland as "the most vulnerable point in the Empire." Or again, I could fall back on Captain Mahan, who has quite recently been much quoted to warn us what Ireland in hostile or unfriendly hands might mean, or on the

This lecture was delivered extempore.

views of some of our own most distinguished soldiers and sailors. But long before Mahan, long before Dumouriez, before ever the Boyne had been fought and won, a writer whose very name is unknown, but whose views are recorded and have been recently exhumed, expressed opinions very similar to those we hear round us to-day, and they are interesting and weighty just because they corroborate those of more modern strategists, with an authority which has been maturing for more than two hundred years.

In the Southwell correspondence which is preserved in Trinity College, Dublin, a scheme to meet the plans of James II. is set forth, and in it is to be found a collection of so-called "Aphorisms."[1] These are humbly submitted to the most noble assembly of Lords and Commons at the great Convocation[2] at Westminster, 12th January, 1688-1689, and the fifth of these (there were twenty-eight in all), explains that "without the subjugation of Ireland, England cannot flourish, and perhaps not subsist. For every harbour in Munster would be more prejudicial to the trade of England than either Sally[3] or Algiers ever was, that island being so situated, that England cannot trade with Spain, the Levant, Africa, the East Indies, or West, without sailing almost in view of the Old Head of Kinsale, so that England must traffic at vast disadvantages, hazardous, and charge in armed and double-manned vessels, or with great convoys. Add to this that Ireland would be always in close touch with the enemies of England, and yearly supply a vast number of able bodies to annoy it." Here are quaint phraseology and views in certain respects out of date, but the eternal truths of strategy remain and are just as insistent, just as compelling, as they were two hundred years ago. Ireland is still on the western flank of Great Britain; she still commands the approaches to the Channel on the south, but it is now of importance to us to remember that, in addition, she is on the flank of the seas on the north and east on which millions of tons of supplies are carried to us. Not only Queenstown, but Lough Swilly will be essential to us as a base for the cruisers which are to protect these seas, and secure the very means of existence to our people. Further than that, now at a time when we must seriously weigh the chances and means of replenishing our food supplies in war, the shortest routes, because of the lessened risk of capture, will become the most valuable, and cargoes of food for English consumption will be sent to her through Ireland. Again, our cable communications with the Western world run to us through Ireland, and inter-

[1] Vide *Revolutionary Ireland and its Settlement*, by the Rev. Robert Murray, LL.D. London, 1911. Macmillan. Page 57.

[2] Presumably the convention which met at the invitation of William on his arrival in England, and by whose advice his first Parliament was assembled.

[3] A port on the coast of Morocco, frequented by Barbary pirates.

ruption to them would prove a serious wound. Moreover, on every coast, Ireland possesses harbours where the blockade runner might find his advantage, while with bases for warships, she is equally well furnished. Ports that will be invaluable to us, and might be so to an opponent, if he could utilize them, even temporarily. Everybody knows them, Lough Swilly, Blacksod Bay, and Bantry Bay, Cork and Waterford, Kingstown and Belfast Lough, with many a roadstead and inlet, where the smaller type of war vessels might find shelter. Belfast alone would in a future great war be of prime importance owing to the shipbuilding yards with which she is furnished; but every harbour that was open to an enemy, were Ireland in hands other than our own, would be a potential base from which hostile warships might command the trade routes to England.

But although Ireland has always been of the same strategical importance to us, and although history tells us that whenever England has been at war with an European Power the efforts against her have almost always included an attempt to strike at her through Ireland; expeditions directed against her there have not always been inspired by the same aims.

SPANISH DESCENTS ON IRELAND.

Thus when Spain was a great Power and our main foe, she attacked Ireland more than once. A small expedition from Spain landed in 1579, and another followed it a year later. In 1602, Spain made a more determined effort to secure a base in Ireland, and while one force captured Kinsale, another seized Castlehaven, though it was only able to hold its ground for a short time. But in these cases the main effort was to be made on the coasts of England herself, and the forces employed in Ireland were sometimes feeble and never large.

THE WAR OF THE REVOLUTION IN IRELAND.

Passing to the next serious effort against us by a great Continental Power, let us consider the struggle in Ireland which immediately followed the revolution of 1688.

We now find a different object in the strategy which directed the war. Louis XIV. was then aiming at nothing less than domination in Europe. He was engaged in a great Continental struggle, and his ambition was centred on the acquisition of Spain. His stoutest antagonist and the head of the coalition which opposed him, was William of Orange, and with William of Orange forced to remain in Ireland, Louis would find his task on the Continent immensely eased.[1] It was for that reason and through no sentimental sympathy with the misfortunes of an exiled King, that Louis sent James to Ireland and lent him the aid of French troops. It was no philanthropic

[1] Vide *Revolutionary Ireland*, by Rev. Robert Murray.

love of oppressed Irishmen or zeal for the Catholic religion that made him support the Jacobites across the Channel, but the war in Ireland was undertaken as a part of the greater operations on the Continent.

A portion of the great European movement of the time, the contest was really not between James and his son-in-law, but between Louis XIV. and William. In discussing the strategical value of Ireland to England, it is necessary to bear this fact in view in order to undersand why a more determined effort to gain a vantage point so important was not made. Louis directed the strategy of the war, and since his object was to chain William to Ireland, as much as possible, and keep him off the Continent, it did not suit his purpose to bring the war in Ireland to a swift and decisive end, but rather to make it last as long as possible. James hoped and imagined that he went to Ireland to regain his crown, and that ultimately when Ireland was in his hands he would be enabled to spring from it to England. But that the contest should be transferred to England was probably the last thought of the French King. It was for this reason that the French emissaries, who were with him, wanted James to postpone a decisive battle, and were averse to the decision to fight on the Boyne. After that victory the cause of James in Ireland was dead, while the success of William was so complete that he could leave his lieutenants to finish it, and was free to turn his energies where he would.

It was on the Continent that the decisive point in the struggle between him and Louis lay, and it was to the Continent therefore that he turned his steps.

THE WARS OF THE FRENCH REVOLUTION AND IRELAND. HOCHE'S EXPEDITION.

The next events connected with Ireland and national defence with which I shall deal are those which made the close of the eighteenth century so remarkable. Just as it had been the traditional policy of the French monarchy to carry the war against England into Ireland—an end accomplished as we have just seen by Louis XIV., and projected often by his successors—the designs of the Directory were likewise directed towards her shores. But the object is different from what it was in the case we have just discussed, for the representations of Wolfe Tone and his associates induced them early in 1796 to promise *a serious invasion of Ireland with a powerful army,* and a vigorous support of an insurrection, with the object of securing the independence of the country.[1]

Neither was the strategical situation the same as when French troops were sent to help James. Then the French fleet

[1] *Projets et tentatives de débarquement aux îles Britanniques,* par E. Desbrière, Capitaine d'E. M. Vol. I., p. 64.

had, at any rate, a local mastery, now that of England was predominant, and although there was to be a real invasion, there were forces working inimicably to the project from its very birth, and the effort was not whole-hearted. Long months of delay, divided counsels, and indecision followed the promise, and Hoche, who hated England with a fierceness only equalled by Blücher's hatred of Napoleon, and was the moving spirit of the enterprise on the other side of the Channel, was in despair. So disgusted was he with the dilatory action of the Government and the half-heartedness of the preparations, that at the beginning of December he had advised the Government that it should be altogether abandoned. However, the expedition did eventually start, and Hoche was placed in command of the troops it carried. On December 15th and the following day 17 ships of the line, 19 frigates, and corvettes, and 7 transports conveying a force, which some authorities have placed at 18,000, and others at 15,000 men,[1] together with large supplies of muskets[2] and ammunition with which the disaffected inhabitants of Ireland were to be armed, sailed from Brest. From the very outset misfortune followed and clung to them, and they had hardly started when the "Seduisant," a 74-gun ship of the line, struck on a rock and sank, taking with her to the bottom many of the men she carried and all her valuable military stores and ammunition. We must note, however, that the greatest obstacle to success, the British blockading fleet, had been evaded, and that the flotilla headed for the Irish coast without encountering the slightest naval opposition. But the weather broke, and the French seamanship, which Wolfe Tone had always feared would prove the weak factor in the enterprise, was unequal to coping with it. Hoche, who was in the same ship as the naval Commander-in-Chief, had sailed with sealed orders to be opened when at sea, and it had been left to him to decide where the landing was to take place. The storm separated his ship from the remainder and the naval Second-in-Command, left to his own devices, ordered the majority of the ships to Bantry Bay. Meanwhile, the Directory had repented of their decision, and orders instructing Hoche to bring the expedition home again were despatched. However, on the 20th[3] a portion—but still a formidable portion—of the expedition, in spite of difficulties and mismanagement, did arrive at the mouth of Bantry Bay. Some ships it is true had missed their way, but considering what we know as to the weak and unprepared conditions of the South of Ireland, enough fighting strength

[1] James' *Naval History*, vol. 2, p. 5, says there were "at least 18,000 officers and men."

[2] Desbrière (Vol. I., p. 97) says that Wolfe Tone asked for 300,000 muskets for distribution amongst the disaffected Irish, which gives a measure of the support expected.

[3] Some authorities have said a day or two later.

had arrived to have done a great deal of mischief. As a matter of fact, the General commanding at Cork did not hear of the appearance of the ships at Bantry Bay for two days, and he could not have concentrated 2,000 men against the French force for several more. But Hoche, the soul of the undertaking, was not at hand. Irresolution—the curse of Councils—sapped the vigour of his leaderless subordinates. On the 25th the wind became a gale and drove the majority of the French ships before it from the anchorage. A remnant which succeeded in keeping their position, carried, it was thought, too weak a force to effect any useful purpose by landing. Eventually, they too gave up the enterprise and followed their companions from the bay. Some idea of making for the mouth of the Shannon was entertained, but the wind was too much for people who did not know their own minds, and as best they could the scattered vessels followed one another home. Subsequently some more of the ships that had gone astray arrived with some 4,000 men, but a council of war decided against landing, and on the 6th January these, too, sailed the way the others had gone. Hoche's ship had been hunted away by a British frigate, and he had already given up the expedition in disgust. But no English warships engaged the invaders between December 20th and the date they left. The expedition remains a perplexing muddle, the one thing clear about it being the indecision which from the French Directory downwards distinguished it. The lesson for us is that the British fleet, under Admiral Colpoys, blockading Brest, had failed completely to carry out their mission. Not until the enemy's ships had been for two days at the mouth of Bantry Bay was their escape known. Even then Colpoy's fleet did not gain touch with the French, but sailed away on a wild goose chase to Falmouth and Spithead, where it arrived on the 31st, having accomplished nothing. Lord Bridport, with the Channel Fleet at Spithead, did not hear the news till the 21st or 22nd, and did not get his fleet out till the 3rd of January.

Such is the story of an ill-starred enterprise. Napoleon, the greatest soldier in France, was against it from the first, and some of the Directory and many of the officers of the Navy were in sympathy with him.[1] For at the moment when Hoche was urging his pet project, Napoleon's mind was obsessed by the ambitious dreams that called him to the invasion of Egypt

[1] His subsequent promises of support to the Irish rebel leaders in 1804 had little earnestness behind them either. He then said that he contemplated sending an army of 18,000 to the assistance of the rebels, and declared that he would secure the independence of Ireland. He probably had it as much at heart as he subsequently had that of Poland.

Vide *La France et l'Irlande pendant la revolution.* Par E. Guillon, Paris, 1888, p. 428.

and the conquest of India with a prospect of personal glory and advancement such as was open nowhere else. It had even been arranged that after the ships had landed Hoche's troops they were to sail away back to France, in order to be ready to carry Napoleon and his fortunes to the East.[1] Small wonder that an enterprise with so little driving power behind it failed! But failure though it was, there is no doubt that the mere fact that so distinguished a General as Hoche had actually sailed from France to come to their assistance with a formidable body of troops, gave heart to the disaffected in Ireland, and showed moreover that the British Fleet was not so impassable a barrier as had been feared. In truth, it was rather by good luck than good guidance that a great disaster was avoided, while it is certain that the connection between England and Ireland was never in greater peril than during those last stormy weeks of 1796. Thus the two greatest efforts against England in Ireland failed because for one reason or another they were not pressed with full determination, and met with the fate that half measures in war always encounter. What might have been done is exemplified by what Humbert did, and I will now briefly tell his story.

HUMBERT'S EXPEDITION.

When Humbert landed on the 6th of August, 1798, there were in Ireland hardly less than 100,000 armed men at the service of the Crown.[2] Humbert's force consisted of 82 officers and 1,017 N.C.O.'s and men, and was merely the advanced guard of a force of 13,000 men which was intended to follow. He made his effort, too, at a most disadvantageous moment. The rebellion had been crushed except for the guerilla warfare that still smouldered amongst the Wicklow hills. The province in which he landed had been untouched by the propaganda of the French revolution, and he found little enthusiasm for his cause. He had brought with him many muskets and uniforms, and he even distributed a considerable number, but the recruits who took them soon melted away. Some 500 were with him and his 700 or 800 Frenchmen when he appeared before Castlebar on the 27th. The troops under Lake, which then opposed him, considerably outnumbered his, but although his men were tired after a march of 15 hours, he immediately attacked, and after an affair of a few minutes drove his opponents through the town and sent them in headlong flight to Tuam, 30 miles away. The flight has become celebrated as "The races of Castlebar," and it must be owned that never was a force more completely routed than Lake's.

Humbert rested his troops at Castlebar from the 27th to the 4th September. The ships that had carried him to Ireland

[1] Vide Desbrière's *Projets et tentatives*. Vol. I., p. 391.

[2] Lecky's *History of England in the Eighteenth Century*. Vol. VIII., p. 206.

had sailed away. Unless he was reinforced, his only chance of success or escape lay in an armed insurrection such as he had been led to expect. He must appeal to the disaffected in the country, and he therefore issued a proclamation establishing a provisional government in Connaught, and making arrangements for a general arming of the people.

But the hope of a general rising was vain. On the 4th September Humbert found himself menaced by Cornwallis only 73 miles away at the head of irresistible forces, realized that he could not hold his ground and marched away towards Sligo. It is difficult to see how he can have cherished any hope of ultimate success, and his position in the face of the forces now concentrated in Connaught was hopeless. But on the 5th he had a successful combat at Collooney with 300 of the Limerick Militia, and captured the two guns they had with them. Imagining he had met the vanguard of another army, he did not press on to Sligo, which he would have captured, but turned aside towards the Shannon. Now he was fairly in the toils, and in spite of strenuous endeavours to escape from the opponents closing in on him, he was on the 8th finally surrounded at Ballinamuck, and, after a short resistance against enormous odds, compelled to surrender. Ninety-six officers only (he had increased the number of his officers by promotion) and 748 men remained of the little band that had spread terror over Connaught for 18 days.

Such was a brief adventure justly cherished by the French as a feat of arms, but preserving for us a significance quite different. And it may well be asked, as no doubt it was by those who witnessed the scene, what would have happened had 15,000 seasoned French soldiers like Humbert's landed in the previous year?

We need not stay to examine the other projects of the Directory against England. They were failures, but the principle which they embodied, that to strike at England through Ireland, and weaken her by distracting her and drawing from her strength elsewhere, and their effect on the strategical thought of the period lend them importance.

As regards the outbreak of 1798, had it been better timed, and had it taken place a little earlier, or if Napoleon's expedition to Egypt had been postponed to a later date, it is possible that Ireland might have become a central object in the military schemes of Napoleon, and that "the whole course of affairs might have been changed." (Lecky, vol. VII., p. 255.)

IRELAND AS A SOURCE OF STRENGTH.

Her Contribution to National Defence as Regards Men.

Let us turn now to examine the contribution towards national defence which Ireland has formerly made and is making to-day.

In the past, Ireland has been the source from which England has drawn a very large proportion indeed of her fighting strength. It was Irish soldiers who swelled the ranks of our Peninsular armies and supplied a large part of the men that held the ground at Waterloo. Irish recruits reinforced our armies in all the great wars of the nineteenth century, and there would have been many more with Marlborough and Granby but for the laws which denied them access to the Army. For I may remind you that the religion for which James lost his kingdom stood between many a good soldier and the colours after the last of the Stuart kings had sailed from Kinsale. Because they were Roman Catholics James had endeavoured to fill his Army with Irish, and it was for the same reason that his Parliament kept them out.[1]

The religious tests in force when he reached the throne were the object of his attack, and he was at loggerheads with his Parliament the moment he tried to supersede their provisions and to keep in his Army officers who were not qualified under the Test Act. The end of that effort was, as we all know, that the King lost his crown, and was finally compelled to abandon even the soil of Ireland.

During the interregnum the Peers of the realm who had taken up the government of the country and assumed the functions of the Crown, at once set to work to free the people from the evils with which they had been menaced by the schemes of their dethroned King. The Army was purged of Irishmen and Roman Catholics, hundreds of whom were soon gathered together in the Isle of Wight waiting for transport to their native land. From that time for some years—though a certain number no doubt did so, for recruits were scarce, and Irishmen good material—it was only by stealth that Roman Catholics —in other words, the great majority of Irishmen—could serve their country. But as time went on the system of exclusion was seen to be a stupid policy, and it was abandoned long before it was formally repealed. For as wars crowded upon us, the demand for additional soldiers became more and more accentuated. If they did not send their sons to our Army, the Catholic districts of Ireland were supplying many thousands of stout

[1] On his accession, 6th February, 1685, James II. "greatly increased the Army and chiefly with Roman Catholics. Five Irishmen were ordered to be put into each Company of the Duke of Berwick's Regiment, which then lay at Portsmouth. The Lieut.-Colonel and five of the Captains refused to receive them; but as the order was positive, the Duke of Berwick proceeded to Portsmouth to see it carried into effect, upon which the recusant officers desired leave to lay down their commissions. They were forthwith put in arrest, tried by Court Martial, and sentenced to be dismissed from the Army, and declared incapable of serving his Majesty." From *Military Miscellany*, by Henry Marshall, F.R.S.E., Deputy Inspector-General of Army Hospitals. London. John Murray, 1846. Page 20.

fellows to the forces of France, Spain, Austria, Naples, and Piedmont. And these men were often our sturdiest opponents, while there was scarcely a battlefield on the Continent during the eighteenth century as during that which preceded it,[1] on which they had not fought with distinction. These facts could scarcely have escaped the notice of our War Office, and in 1758 the plunge was taken, and 1,200 marines were enlisted from the Popish districts of Ireland. It was still, however, ordered that no Roman Catholics should be accepted for land service. But when marines had been formally enlisted the case against the Catholics had been given away, and gradually and silently, but increasingly, the instructions only to enlist Protestants became a dead letter. On November the 8th, 1775, the Minister responsible for War stated in the House of Commons that every effort had been made to meet the pressure of the American War of Independence, "the bounty had been raised, the standard lowered, and attempts had been made to *enlist even Roman Catholics*."[2]

From the commencement of the war in 1793 to November 1796, Ireland, with a population of 4,500,000, furnished 38,653 men to the British Army, 11,457 to the Navy, and 4,058 to the Marines, in addition to the 30,000 Militiamen she found for the defence of her own shores.[3]

Thus, surreptitiously, perhaps, but none the less effectively, did Ireland during the eighteenth century contribute to national defence, and in every war that took place from the Revolution to the last quarter of that century, Ireland was an assistance rather than an embarrassment to England. Finally, all pretence was dropped, and from the beginning of the nineteenth century, and possibly before, Roman Catholics were admitted to the Army with the cognizance of the Crown.[4] We find that in 1802 a regulation was brought into force which exempted them from attending the Church of England services, and it may be said that from that date religious tests completely disappeared from the Army. In consequence we find that the numbers of Irishmen serving in the ranks became very considerable. I have not got any complete figures for the earlier years of the last century, but how large the numbers were is evident from a few illustrations I have extracted from Clode.

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1 "Her swordsmen all through the seventeenth century went to fight and die on the battlefields of Europe." *The life of James, First Duke of Ormonde*. By Lady Burghclere. Vol I., p. 120.

2 Marshall's *Miscellany*, p. 48

3 Lecky's *History of England in the 18th century*. Vol. IV., p. 248.

4 Up till the end of the last century every recruit was required to subscribe an attestation which contained the subjoined passage:—

"I —— do make oath, that I am a Protestant, etc."

This passage was first omitted in the Recruiting Regulations promulgated in 1799. Marshall's *Miscellany*, p. 59.

Thus it appears that[1] under Pitt's Act of 1804 the recruits enlisted between the 5th September, 1804, and January the 31st, 1806, were of the following numbers and nationalities:—

England and Wales	5,782
Scotland	1,183
Ireland	4,078

Again, for the first six months of the years specified, ordinary recruiting produced the following results:—[2]

Year.	Nationality.	Number.
1805, 1806, 1807	Great Britain	15,489
	Ireland	4,261

In 1816 an Act of Parliament was passed which enabled the King to grant a commission in the Army, Navy, or Marines without previously requiring the person to take any oaths, or make any declaration, and all ranks of the Army were opened to every denomination. "From the Revolution of 1688 until this Act was passed, not a single Roman Catholic had been promoted to the rank of a General Officer in the British Army."[3]

In Appendix A, I have given the complete figures from 1820 to 1911, showing the percentage the Irish recruits bore to the total number enlisted into the Army. It will be noticed that the figures, although they rose just at first, have declined steadily in spite of temporary enlargement. Thus, in 1822 the percentage had risen from 20.89 in 1820, to 36.80; in the following year it fell again to 32.68, but in the next slightly rose to 33.05. Then a fairly steady decline set in until famine drove starving men into the ranks. In 1847 we note that 42.15 of the total recruits came from Ireland, and the high water mark of her contribution to national defence was reached. Some two millions of her inhabitants perished in Ireland during the catastrophe of 1846-47. Irish agriculture was ruined, and the repeal of the Corn Laws following close upon the terrible visitation prevented a recovery. The population, which had risen from 4,088,226 in 1792, to 5,937,856 in 1814, to 6,801,827 in 1821, and to no less than 8,196,597 in 1841, greatly reduced as I have said by the famine, began to fall away as want of employment on the farms and the attractions of America and the Colonies drove men to emigrate, until to-day it is less than four and a half millions, or scarcely half what it was before the potatoes failed.[4] Then, though not remarkably so all at once, the toll of Irish recruits begins to diminish, too. The Crimean War gave a temporary stimulus, and we note

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1 Clode's *Military Forces of the Crown*. Vol. II., p. 54.

2 Ibid, p. 592.

3 Marshall's *Military Miscellany*, p. 78.

4 According to the Census of 1911 it was 4,381,951 in that year.

that in 1854 the percentage was as high as 36.35, but except for an exceptional year now and again, the decline has been unarrested, until in 1906 we find a percentage of only 7.76. Since then it is encouraging to find a slight improvement showing itself.

From 1868 I have been able to give the total number of Irishmen actually serving in the Army in each given year, and it will be noted that in that particular year there were as many as 55,583. That is to say we had then more Irishmen in the Army than our strength in the Peninsula when Wellington's forces were at their strongest. The number of our Irish soldiers was greater, too, than the largest British force we ever placed under our commander in the Crimean War, or—as far as that goes—than any we were ever able to muster on active service until our last great struggle in South Africa. Even now when the number is much smaller, the contribution which Ireland makes in flesh and blood to the defence of the Empire will seem satisfactory when it is remembered that her total population is scarcely a tenth of that of Great Britain.

Nor does her contribution end with recruits for the Army.

CONTRIBUTION OF RECRUITS TO THE NAVY BY IRELAND.

Just now I quoted an illustration of what Ireland's contribution to the Navy at the end of the eighteenth century had been. I have not got anything like complete figures for that century, or for that which followed it, but it is recorded that Grattan's Parliament voted £100,000 towards furnishing 20,000 additional sailors to the British Navy.[1] We know that Wolfe Tone represented to the French Directory in 1796 that two-thirds of the crews of British men-of-war were Irish. Here he was probably exaggerating for his own purposes, but he was on firmer ground when he contended that by separating Ireland from England the latter country would be placed in difficulties as regards recruiting for her Army, and especially so in equipping, victualling, and manning her Navy.[2] Again, in 1810, Sir J. Hippisley,[3] speaking on the Catholic question, stated that in 46 ships of the line which at different periods had belonged to the Plymouth Division the Catholics greatly exceeded the Protestants, in some of the first and second rates amounting even to two-thirds; in one or two first rates to nearly the whole. In the Naval Hospital in 1806, of 470 sick 303 were Catholics. I am sceptical as to the passion for the sea of the Irish peasantry however, for it is to be noted that in the eighteenth

[1] Lecky. Vol. IV., p. 534.

[2] Ibid. Vol. VII., p. 246.

[3] Sir J. Hippisley was an M.P. of the period and an advocate for Catholic Emancipation.

century recruiting for the Navy was largely affected by the press gang, or by poverty, and it is probable that the suspected persons who had recently been sent to the fleet from the disturbed districts had increased the proportion of Irish sailors at the period in question.[1]

The following figures show the contribution by Ireland for the years stated :—

Year.	Naval ratings.	Marines.	Total.
1899-1900	629	16	645
1900-1901	555	19	574
1901-1902	852	81	933
1902-1903	730	64	794
1903-1904	697	57	754
1904-1905	445	46	491
1905-1906	362	45	407
1906-1907	417	34	451
1907-1908	395	55	450
1908-1909	287	28	315
1909-1910	344	17	361
1910-1911	334	26	360
1911-1912	198	61	259

I have been able to obtain no information as to the actual number of men who served in the Navy in the last century beyond the fact that in 1851 there were 2,005 men and 370 boys of Irish birth in it.

We must only hope that as capital becomes available to develop her fisheries and maritime industries, a seafaring population may grow up in Ireland which will contribute more largely to the numbers of our seamen.

CONTRIBUTION AS REGARDS OFFICERS.

I have not been able to give you the actual number of officers of Irish birth who have held, or are now holding commissions in our Army and Navy except as regards the figures in Appendix A, but whatever it is at present, I feel sure I am guilty of no exaggeration when I say that from the time when religious disabilities were removed up to quite recently it must have been large, absolutely, and very much so relatively, to the population of the country. Even now I think we must look across the water for a considerable proportion of our officers, not only in the Army, but in the Navy, too. Certainly in former times the gentry of Ireland sent a large number of their sons into the Army, and especially into the cavalry. Sport and arms have hitherto, and rightly so, gone together. There is that in the air of Ireland that makes a boy love a horse and a hunt, and there is less to distract his attention from them. Less of the pleasures of town life, less luxury, not to speak of less business openings to

[1] Lecky, Vol. VII., p. 406.

draw him away from where his instincts lead him. The priesthood in Ireland can claim few or none of the gentry. The Irish Church offers small material attraction, and could never provide for more than a limited number. The bar and medicine alone remain, and did, and do not attract the majority of boys. Thus it is that so many distinguished soldiers and sailors have been of Irish descent, and that no slight contribution to national defence from across the Channel has taken the shape of military talent or even genius. Beginning with Eyre Coote, Ireland has given us Admirals Stopford and Blackwood, Wellington, the Lawrences, the Beresfords, the Goughs, Lord Roberts, Lord Wolseley, Sir George White, Sir O'More Creagh, the present Commander-in-Chief in India, and a host of other distinguished commanders whom it is quite unnecessary for me to specify, since I do not imagine anyone will dispute the assertion I have made. What is more open to question is whether we can hope to see the supply of officers and men kept up in the future as in the past. It is not my purpose to enter here into any examination of this part of the subject, because I should have to wander somewhat far from my immediate theme and open up aspects of it beyond my scope. But I may say this: during comparatively recent years an effort has been made in certain quarters in Ireland to disparage the Army and interfere with enlistment. I speak subject to correction, but I believe the effect produced has been small. Like other recruits the Irishman most often enlists because for one reason or other he wants to get away from home; very often because he cannot keep his head above water except by taking the King's pay. No influence in the way of political argument is likely to be able to compete with these compelling causes, while the increased independence of character which the spread of knowledge and a higher standard of intelligence bring with them, will tend to make men more prone to follow their own inclinations. Recruiting in Ireland is at present good, and as yet there are no signs of political influences making themselves felt, but no one can say more than that, because no one can forecast the circumstances that will prevail in Ireland even two years ahead. In the case of officers, however, it is different. The landed gentry of Ireland, the most abundant source of supply to our cavalry, is diminished and diminishing. Families are smaller, incomes are less. Not only there are fewer sons, but there is less money to give allowances sufficient for the present expenses of cavalry. We get a very fine contingent of young fellows from Irish families still, but they often want to go to the Indian Army or branches where allowances from home on a small scale will enable them to live. The Officers' Training Corps contingents in Ireland have done extremely well, and there are no finer or more efficient corps, but whether our mounted services can hope to be reinforced from them is

problematical, although there is no doubt that a magnificent reserve to the less expensive corps and the departments of our Army has been secured. Nor do I imagine that the future can be said to offer promises of improvement in this respect, for the class in Ireland that used to send officers to the Army does not seem likely to grow either in numbers or in wealth.

CONTRIBUTION BY IRELAND AS REGARDS HORSES.

But Ireland has contributed and is contributing towards national defence in more ways than by sending men and officers to the Services. High as have been the quantity and quality of her recruits, it is for her horses that we are almost most indebted to her, and we are likely to call on her more and more in that respect, during future years. It is wholly unnecessary for me here to call attention to the excellence of the horses bred in Ireland, or to enlarge on the advantages that country offers for breeding and rearing them. For years, not only has she supplied us, but she has sent many thousands of horses to foreign countries, and the demand for them is eloquent testimony as to their value for military and sporting purposes. How great was the contribution from Ireland in horse flesh in years long gone by I cannot tell you, but it stands as follows for the years I have specified below :—

Financial Year.	Horses.
1907-8	1,660
1908-9	1,837
1909-10	2,236
1910-11	2,150
1911-12	2,222
Total	10,105

In other words, we now go to Ireland for an average of 2,051 horses every year. When it is considered how important and pressing a question this one of horse supply for the Army is, I do not think that the value of Ireland as a source of supply is likely to be underrated. What must give soldiers anxiety is the effect certain demands for ploughing up grass lands and sub-dividing farms, if they are ever carried out, will have on one of Ireland's principal industries and its output. As things seem going now the demands of the Army will probably increase. The sources from which they can be satisfied are probably drying up more rapidly in England than in Ireland, and we shall therefore rely on Ireland more than ever in the future.

IRELAND AS A TRAINING GROUND.

But before I leave this portion of the subject I must mention one other direction in which Ireland has immensely benefited

our Army in the past and is helping us to an increasing extent every day. Nowhere are training facilities better than in that country. It is usually not difficult to obtain ground over which training may be carried out, and the terrain lends itself, as a rule, to tactical requirements. Without being so open as to become abnormal, considered from the standpoint of where we may be called upon to fight, it is not usually so cut up by hedgerows and trees as places nearer London, while the broken nature of the country affords opportunities for instruction of the best kind. It is only a minor point, but it would scarcely be correct while enumerating the benefits which we derive from Ireland, to leave out one that I am sure all officers who have been quartered in the country will remember gratefully. Nor am I willing to let slip this opportunity of recognizing the help received from landowners and tenants when arrangements for the summer's work have been in progress.

To the Army and Navy then, which is scattered all over the world, Ireland has lavishly given leaders, men and horses. She has lent her soil to train them, and altogether has made a very real and substantial contribution towards the defence of the Empire. It is time to enquire what part she will bear in the defence of our home territory, and I now approach a portion of my thesis on which perhaps we may hear something of interest this evening, but which it is most difficult for me personally to discuss.

IRELAND AND HOME DEFENCE.

Geographical and Economic Characteristics of Ireland.

For if I were to enter into this part of the subject in any detail I should very soon find myself expounding something in the nature of a defence scheme, and I do not therefore propose to say anything as to the duties of the various bodies of troops that may be allotted to the defence of Ireland, nor as to the considerations that may influence their employment. But I will remind you that in time of war the location of troops is governed by strategical considerations, while the preservation of order, or the demands of recruiting or training have prompted the construction of many of our older barracks, more especially in Ireland. Should the defence of Ireland, or for the matter of that, of any other portion of our home territories, have to be seriously undertaken, it will often be necessary to find accommodation for troops at strategical points where no barracks exist. And here the geographical characteristics of Ireland call for our attention. That island is unlike most others not less as regards physical geography than in some other respects. In islands one usually expects the highest ground—often towering up to mountains—to be found in the centre, sloping away

to low-lying regions near the sea. But in Ireland we find the lowest ground in the middle of the country, while tumbled masses of rock and mountain surround her coasts. It is as though we had been buttering a piece of bread, and had spread the soil thin in the middle and left it lumped up along the edges. Therefore, in the centre portions of Ireland you find dreary stretches of heather, the bog of Allen, and the wilds of Longford, melancholy wastes, and unbroken loneliness. The small homesteads of struggling agriculturists dotted sparsely about the country are the only habitations. Again, Ireland having no coal nor iron, and no great manufacturing centres has depended largely on her carrying trade in the past, and her most populous cities and towns are therefore sea ports, and are situated on the coast-line or at the head of estuaries, not very far away. In the central portions of Ireland, towns are smaller and unprovided with the substantial business premises or private houses that we find in inland towns or even villages in England and on the Continent. Billeting, as everyone who has marched there knows, is always a difficulty in Ireland.

In these circumstances, and for reasons I shall refer to later on, it is not improbable that under active service conditions, a considerable proportion of the army in Ireland would have to be encamped. Now, during the summer months, such a method of disposing of troops would be the best from the aspects both of administration and training. But war would not necessarily break out in the spring, and it might last for many months, for a year, perhaps even longer. It would be undesirable to keep men continuously in camp during the late autumn or the winter in a climate such as that of Ireland, and therefore hutments might have to be provided if war were likely to be prolonged. Recourse to such an expedient would necessitate the acquisition of sites for more than the short periods involved when training camps are established, and to obtain them might call for the exercise of compulsory powers. Again, camps, whether equipped with huts or tents, must have spaces in their neighbourhood suitable for the training of the troops that will occupy them. In ordinary circumstances, as has been said, there is no part of the Kingdom which, speaking generally, offers better facilities for training than does Ireland, but to hire land when the crops are off the ground, or in places where agriculture will be but little interfered with, is a different thing from obtaining it for continuous periods that may seriously interfere with agricultural operations, and recourse to compulsion might be extremely unpopular. However patriotic a people may be, there may very easily be friction between the military authorities and those who claim to represent the interests of certain classes as against the interests of the community in general. These difficulties may arise in

England and Scotland too, but Ireland is essentially agricultural, and her greatest industry would be the one which would be most affected. It is scarcely necessary for me to add that the preparations for the accommodation of her field troops would not end with the creation of camps or the acquisition of training grounds and rifle ranges. The necessities of considerable bodies of men arbitrarily collected together at the behests of strategy, make demands as regards water supply, sanitation, the storage and distribution of supplies, hospitals for men, remount depôts, ordnance depôts, railway sidings, platforms, roads—in a word all the machinery through which an army is administered must be furnished, and their provision may mean the exercise of special powers, which are put in force by the civil authority.

Again, the field force needs transport, and in time of war its acquisition may not always be possible by purchase in the open market. Possibly it might not be necessary to utilize the powers that our constitution places at our disposal in war, but if it were, the pinch would very probably be more felt in Ireland than in Great Britain, because there would be less to come and go upon. In a poor country, farmed by small tenants or owners, agricultural equipment of all kinds is reduced to bare necessities. A man has just enough to serve his purpose and no more. His resources are smaller, and his arrangements less able to resist the dislocating effect of sudden and unexpected interference. At the outset, therefore, we are reminded how a problem, always difficult, is rendered particularly so, by the special circumstances of Ireland; and there are other factors too peculiar to that country that we must not overlook.

LOCAL TROOPS IN IRELAND.

Ireland has fewer local military organizations than either England or Scotland; there are, in fact, no territorial troops there at all. For those two fine corps, the North and South Irish Horse, differ from other Yeomanry Regiments in that they do not belong to the Territorial Force, but to the Special Reserve, and they accordingly appear in the "Army List" immediately after the Regular Cavalry, and before the Yeomanry, in a place by themselves. Thus the army is less part of the national life in Ireland than elsewhere, and there is less appreciation of military needs and necessities amongst those who are not in the immediate neighbourhood of camps or barracks. Other disadvantages too of a far more serious character follow on the absence of local troops in a country called upon to defend itself. I am not going to make any suggestions or attempt to influence opinion; I have nothing to do with the causes that have produced the state of things I am dealing with. I simply state facts as they are, and I hope

I may be allowed, therefore, to enunciate the mere platitude that it is an advantage to fight in a country that one knows intimately. It may be argued that war does not come on us like an attack of influenza, and that all and any troops employed in home defence will have time to become familiar with their theatre of operations before the enemy makes his appearance. But that is only cold comfort. The Japanese landed forces at Chemulpo and seized Seoul on the 8th of February, 1904, while war was not declared till the 10th, and on the 21st the 12th Division, which had landed at the same place, was in possession of Ping Yang. In any case the paucity of local troops means small chance of the formidable resistance displayed by men in their own fastnesses, such, to name only a few instances, as of the Boers amongst their kopjes, Schamyl's followers in the Caucasus, or the Spanish and Portuguese *partidas* in the Peninsula. Perhaps, moreover, the direction in which the paucity of local forces may make itself felt is one which will not be apparent all at once. I am probably not far wrong in saying that the coast line of Ireland measures between 2,000 and 3,000 miles. The exact figure is immaterial, because our calculations will not be based on any mathematical niceties. Strategy teaches us that the wisest method of defending a long line of coast or river is not to dot our forces down piecemeal along its whole extent, and thus become strong nowhere in an effort to guard every point. Rather should we watch the line of coast or river with a chain of posts, or by means of patrols, while the bulk of our force is held concentrated in such a way as may enable us to meet an invader with adequate strength. Now, to watch an extent of coast such as that of Ireland, makes heavy demands on mounted or highly mobile troops. No doubt every portion of the coast in question does not offer facilities for landing on an open beach, the only method of effecting a surprise; but making every allowance for the restrictions which geographical conditions will impose on an invader's choice, there will still remain a very wide stretch of coastline to be watched. True it is again that aircraft may be of substantial assistance to us in our task. In view, nevertheless, of the climatic conditions of Ireland, of its wind, rain and mists, I do not think we should feel secure unless we could supplement the efforts of airmen with a more old-fashioned system of look-outs. If we were to scatter our mounted troops along the coasts, utilizing them as vedettes and patrols, we should be without their services in all probability when battle was joined with the invader's main force, and there would certainly be no opportunity of training them for use on such an occasion. In any case a very large body of mounted troops would not be available when the extent of coastline to be watched is considered. In England and Scotland the case is widely different. There we possess cyclists which could be turned to very valuable account in the way I have described, and we have a coastline more inhabited, and that too by a maritime population

better educated and more under the influence of the local gentry.[1] In all cases, of course, we should be able to count on a certain amount of help from the coastguards. But in recent years that service has been very greatly reduced, and we cannot look to it to the same extent as we were able to a few years ago (comparatively speaking). In dwelling on this aspect of Irish defence, I am by no means forgetting the Irish Constabulary, probably the finest body of armed men in the world, and the most useful, helpful and trustworthy servants of the Crown. We do not know how far or in what numbers the Irish Constabulary will be available, to lend their aid to the military authorities, but even granting that their aid will be as full and ungrudging and prompt as it has been in the past, so many other duties would be thrust upon them at a crisis in the affairs of the country such as we are dealing with, that we certainly cannot count on their being utilized in the *rôle* of watchers along lonely stretches of an often desolate seaboard. The fact, therefore, that Ireland is not only wanting in adequate local forces, but that the special circumstances of Ireland make it desirable that we should receive special assistance from auxiliary forces is a factor in the problem of national defence which calls for consideration.[2]

The help which semi-civilian organizations may render to the State in watching a coastline is perhaps the easiest and most readily understood of all the activities open to such agencies, but the observation of a coastline or of its vulnerable portions by no means represents the sum total of what is required nor of what can be done. I do not mean to imply that Ireland contains more people disaffected to the Crown than other portions of the Kingdom, but, nevertheless, it will be at least as necessary to guard against the action of evilly disposed persons in Ireland in the direction I am about to indicate, as it is necessary to do so in other places. An immense amount of mischief might be done by small bodies of men, or even individuals, working by stealth in (for example) the demolition of lines of rail, the blowing in of a tunnel at a critical point, or the destruction of a bridge. The outbreak of a war might leave many foreigners in the country, who would act as spies, or would be prepared to do surreptitious injury to us acting secretly and expeditiously against unguarded points such as I have indicated. The process of concentrating

[1] While these pages were going through the press it was announced that the Army Council had decided to allow County Associations to raise "Corps of Guides" as part of the Technical Reserve of the Territorial Force. Whether the duties of these guides will comprise assistance in observation is not known, but they will assist the defence of the country very considerably in a manner for which no provision is made in Ireland.—Vide Appendix C.

[2] It is to be noted that last August a suggestion to form volunteer corps in Ireland was put forward.

our forces, or reinforcing a threatened point might seriously be interfered with in the manner I have shown. To fritter away highly trained men in detachments to watch such points would dangerously drain away our fighting strength, while since the danger to be guarded against would not come from organized military forces, it would be waste of power to use regulars for such duty.

VOLUNTEERS IN IRELAND.

While, however, we may lament the absence of local forces in Ireland enlisted for Home defence as are the Territorial troops in Great Britain, a glance at the experiences of the past must make us admit that there is no more difficult question than that of their creation. For while Ireland has had Volunteers, and Volunteers, too, that were of supreme value to her defence, their history accentuates the difficulties with which her special circumstances invest the existence of such forces. When the pressure of the War of American Independence and the struggle with France and Spain and Holland had almost exhausted our resources, Ireland, drained of Regular troops, lay at the mercy of an invader. The threat of a French invasion alarmed the citizens of Belfast, a town already rising into prominence, and they appealed to the English Government for protection. But the Government was helpless. There was only a handful of troops and invalids available, and in its extremity all it could suggest was that the inhabitants of Belfast were free to defend themselves. That is to say the Protestants of Belfast, for the Penal Laws were still in force. All this happened in 1778, and in that year therefore the volunteers of Ireland made their first appearance. Their officers were selected by the men. They were clothed, armed, and accoutred by private enterprise, and were drilled and trained according to the ideas of their own leaders. They were also really territorial in their organization; every village had its own little corps, from fifty to one hundred strong, and these small bodies paraded at stated times and took part in reviews or field days to the great satisfaction of the neighbourhood, who were proud of their defenders. While the menace of invasion still hung over the country the forces so established were a really valuable asset to the Government. They were led by the aristocracy and most respected people of the country, and might be relied on to act as the interests of the State demanded, thus "they preserved peace in their country and rendered it so strong that invasion was not attempted." But when the scare of invasion had passed away, and while the whole of our Regulars were still locked up in the struggle with America and France and the coalition on the Continent, these Corps found themselves the only formidable military force in Ireland, and had leisure to turn their attention to politics. They had grown during the years since they had been created into a powerful body of nearly 100,000 men

supported by artillery. And they wielded a power which in England's extremity was paramount. Ireland in those days had grievances, which affected her trade and manufactures of a very real kind, and her Parliament desired to legislate in her own interests and break away from the restrictions Poyning's Law imposed on it. On February 15th, 1782, the celebrated Convention of the Irish Volunteers was held in the great church at Dungannon, when delegates from 143 Corps from Ulster were assembled and passed certain resolutions which were subsequently supported by the remainder of their comrades throughout Ireland, and sent to the Irish Parliament for ratification. The grand juries in almost every county also asserted the right of Ireland to legislative independence. It does not concern us now to go fully into the whole story of what followed. It is enough to say that the outcome of this action on the part of a military organization was that the English Government was forced to listen to arguments backed up by so formidable a force, and that eventually what is known as "Grattan's Parliament" was called into existence. It was a time when revolutionary ideas and revolution were in the air, and these spread from France and America to Ireland, as well as to other places. The loyal and patriotic Volunteers imbibed the new notions, Roman Catholics found their way into their ranks, and the country gentlemen, who had hitherto led them, began to leave organizations with which they were not in sympathy. The Volunteers little by little came to quarrel with the Parliament to which they had given independence. But in 1792 the British Government was less under pressure abroad and could afford to assert its authority at home. The Volunteers were suppressed, and the Militia system with the ballot was established in Ireland in their place.[1] But in 1796 the menace of invasion again hovered over our shores. The Militia were not above suspicion, and the Irish Yeomanry, which consisted of both infantry and cavalry, was organized to fill the gap caused by the suppression of their predecessors. But this force was controlled and paid, when called up for permanent duty, by the Government; while the officers were appointed and the men armed, clothed and equipped, as in the case of its other forces, by the State.

The rebellion of 1798 caused the Yeomanry to be embodied, and then the majority of corps proved loyal to the Crown, while the behaviour of a few was less reassuring. During this crisis, too, the behaviour of certain Militia regiments was

[1] The Militia establishment in Ireland dated from 1715. In 1793 all the Militia Acts were consolidated by 35 Geo. III. c.8 of the Irish Parliament, and a Militia force, composed both of Catholics and Protestants, 21,660 strong was raised in Ireland.—Clode. *Military Forces of the Crown.* Vol. I., p. 44.

unsatisfactory, and at Castlebar the conduct of some battalions can only be described as bad.[1]

Owing to the part they had taken in the suppression of the rebellion, the Yeomanry were not popular in the greater part of Ireland. With the increasing power of the British Fleet the chances of hostile invasion grew less. The Peninsular and Waterloo campaigns were fought, Napoleon fell, and a period of prolonged peace set in. The need for Yeomanry in Ireland became smaller and smaller. They were gradually allowed to die out, and altogether disappeared, I think about 1835.

Such is a very brief sketch of the history of Volunteers and Yeomanry in Ireland. I must not stray into politics, but I could scarcely hope to assist any effort to apply the experiences of the past to what the future may bring with it without saying what I have. My share of the task is completed in the brief story I have placed before you.

PREPARATION FOR WAR AND OF THE THEATRE OF WAR.

And now leaving the particular, let us proceed once more with the general question before us. Does not the story of Louis XIV. and James, of the irresolute Directory and the ardent Hoche, does not the reference I have made to the need for a proper understanding of the many-sided problems of national defence serve to recall to our minds that principle on which, more than any other success in war, whether offensive or defensive, whether abroad or at home, is based? I mean the necessity for politics and strategy being in harmony, or in other words, for the civilian administration of a country seeing eye to eye with its military leaders in their preparations for war, as well as giving them support during the struggle.

Now preparation for war in general is so obviously the duty of a government, that I need not enlarge on it here. But preparation for a particular war is not so universally understood and admitted, and yet it is in this respect that the necessity for the closest understanding between soldiers and civilians is most clearly exhibited. It is not too much to say that all success in war which has been achieved swiftly and decisively has been due to such an understanding having existed, and to the fact that a steady and clearly defined purpose has been kept in view in preparing the armed forces of the country which has emerged triumphant from the struggle. The Prussians not only organized and trained their army for war in general, but for the particular wars against Austria in 1866 and against France in 1870. Years of preparation for war in Manchuria preceded the Japanese victories of a few years ago. To-day the Bulgarians have been defeating the Turks not because they are better fighters, but because they prepared for the war on which they entered. Instances such as these might be largely added to, but no one now-

[1] Vide Fortescue's *History of the British Army*. Vol. IV., p. 590.

a-days will contest the truth of the principle I have enunciated, nor deny that had we prepared our forces, as did the victors in the contests I have referred to, we should have sometimes been more successful at a less expenditure of life and money than we have been in the past. But for a State such as ours, governed by a Parliament actuated by party considerations, to prepare beforehand for particular wars of an offensive character, must always be difficult. We are, at any rate, and have been so for many years, at a disadvantage with countries where the will of a ruler can assert itself in shaping foreign policy, and adapting strategy and the instrument of strategy to be in complete harmony with it. But where the defence of our shores is concerned, where the potential war is to be waged on our own territory in defence of hearths and homes there is, or ought to be, less room for differences of opinion between parties, and there should exist a very cordial understanding between statesmen and soldiers as to preparation for that particular kind of war. I have very lightly touched on certain shapes which such preparation might assume, but there are even more definite steps and precautions to be considered which can be thought out and prepared for in times of profound peace, which must not be neglected. When not only can a particular war be foreseen and prepared for, but when the regions in which collision will probably take place can be recognized beforehand, our foresight can embrace the preparation of certain localities with a view to fighting, and arrangements can be thought out and matured for carrying out all the military steps that should be taken up to the moment when war is actually declared, or collision may occur. Recent experience has taught us that a great crisis in the fate of a nation may be reached without a formal declaration of war, and that we cannot wait supinely for a signal to begin. It is scarcely possible, however, that relations should not be strained before they break, and when the strain is felt it will be possible and necessary to take precautions. Such precautions in the case of Home defence will give us examples of the preparation of the theatre of war, and will illustrate the close and cordial understanding which must exist between the central government and those who may be called upon to take action. In our case it will be in London that the Foreign Minister will weigh possibilities, and that the Cabinet will decide as to the steps that must be taken. Obviously it is impossible to indicate the forms such precautions might assume, but it will be understood that they may temporarily impinge on the interests of individuals or disturb their private arrangements. When the troop trains are being filled, when the danger of an invasion is imminent, men will submit cheerfully to such demands as I have foreshadowed, but when mobilization is only in the air, when many may think that there will not be a war at all, it is quite possible that those who perhaps very rightly regard

the interests of private individuals as their immediate care, may not see the necessity for more or less drastic action, which to them may seem uncalled for or premature. Thus we perceive that the same harmony between civilian and military authorities, in other words, between politics and strategy, is as essential in the minor details of Home defence as in the greater operations of war, and that there is even an especial need for a close understanding and sympathy in the case of an island of the highest strategical importance to us which is widely open to assault.

What then is the lesson that in a fashion, necessarily feeble and incomplete, I have to-day been trying to inculcate, what is the thread that is to be traced through the considerations I have ventured to place before you? Though I have been speaking of Ireland and its relation to national defence, much of what I have to say applies elsewhere than in Ireland, and the root of the matter is that the defence of these islands must be considered as a whole, that a successful raid on Ireland would only be less fatal than a similar disaster in England or Scotland because its effects would be less immediate; that the security of our homes and our Empire depends on the efficiency of troops enlisted in Ireland, and the security of Ireland on that of troops enlisted in Great Britain, that unity of thought and of purpose must animate the executive that directs and governs the action of the armed forces that will be called upon to defend the territory of these islands. Unless I have fallen very far short of my purpose I have succeeded also in reminding you that every citizen amongst us can and should render some nature of assistance to the common cause. Some will have greater opportunities than others, some may be able to do very little, some—as in the case of those who actually take their places in the ranks—may make sacrifices to the fullest possible extent. From others submission to temporary inconvenience only may be demanded, or the pressure may assume forms more remote but equally real and unpleasant; but that every one will be intimately and closely affected, should war come upon us in our Home territory, is certain and sure.

I have not shrunk from stating certain facts which may be interpreted to illustrate the difficulty of enabling every willing Irishman to serve his country in time of need. I draw no conclusions from the facts because I must avoid politics. But though I must take care not to trespass on forbidden ground, I shall surely overstep no boundary when I say that I do sincerely look forward to the time when it may be possible to invite Irishmen to come forward in greater numbers and prepare themselves to play their part in the great cause of national defence. It is, perhaps, a visionary aspiration, but it is one in which I am sure you will not hesitate to join, and I cannot conclude what I have to say more fitly than by giving expression to a sentiment which I feel confident will meet with the approbation of everyone who devotes thought and consideration to the subject which has occupied us this afternoon.

APPENDIX A.

Return of the number of recruits raised in Ireland, year by year, and the total raised for the British Army, for the years 1820 to 1911. With the numbers of Irish serving in the ranks from 1868 to 1911.

Source from whence derived.	Year.	Raised in Ireland.	Total Recruits	Per-centage.	Irish serving at various dates.	Irish Officers.	Total Army.
Extract from the Report on Recruiting, 1861. Page 325.	1820	1,606	7,686	20·89			98,979[1]
	1821	1,649	6,261	26·33			96,194[1]
	1822	2,317	6,296	36·80			84,412[1]
	1823	2,485	7,603	32·68			81,713[1]
	1824	3,391	10,259	33·05			83,720[1]
	1825	6,742	22,056	30·56			85,638[1]
	1826	4,644	15,449	30·06			97,325[1]
	1827	2,881	9,741	29·57			99.707[1]
	1828	1,074	4,756	22·58			99,334[1]
	1829	445	3,398	10·15			96,209[1]
	1830[2]	293	3,326	8·80	42.897		92,805[1]
	1831	2,299	13.642	16·83			88,037[1]
	1832	,155	6,852	16·86			94,377[1]
	1833	868	6,000	14·46			97,795[3]
	1834	649	3,501	18·53			90,831[3]
	1835	931	5,993	15·53			87,378[3]
	1836	1,195	6,955	17·18			86,523[3]
	1837	1,612	9,215	17·49			86,599[3]
	1838	2,141	12,923	16·57			89.314[3]
	1839	3,906	21.197	18·42			95,460[3]
	1840[2]	3,062	15,960	19·18	41,218		104.597[3]
	1841	2,396	14,094	17·00			108,194[3]
	1842	3,064	15.904	19·26			111,831[3]
	1843	2,816	12,504	22·52			115,124[3]
	1844	1,976	9,127	21·65			109,658[4]
	1845	2,152	9,837	21·87			109,208[4]
	1846	4,506	20.862	21·59			109,110[4]
	1847	6,741	15.992	42·15			119,787[4]
	1848	3,350	12,407	27·00			120,790[4]
	1849	1,850	7.516	24·61			128,141[4]
	1850	1,139	6,321	18·01			117,377[4]
	1851	1,380	8,376	16·47			113,679[4]
	1852	2,234	12 683	17·61			113,287[4]
	1853	2,123	10.949	19·38			119,519[4]
	1854	9,599	31.620	30 35			119,881[4]
	1855	5,559	32.119	17·30			163,251[4]
	1856	1,602	9,998	16·02			215.941[4&5]
	1857	3,974	22,095	17·98			182,506[6]
	1858	7,746	41.713	18·57			154,387[6]
	1859	4,940	24,738	19·97			124,418[6]
Extract from Parliamentary Papers, No. 364 of 1864. Vol. 35, Page 473.	1860	3,283	21,664	15·15			154.181

[1] From Parliamentary Papers, No. 317 of 1831-32. Vol. 27, Page 115.
[2] From Parliamentary Papers, No. 307 of 1841. Vol. 14, Page 93.
[3] From P.P. No. 439 of 1846. Vol. 26, Page 147.
[4] From P.P. No. 79 of 1857. Vol. 27, Page 123.
[5] Includes 14,950 British Foreign Corps.
[6] From P.P. No. 83 of 1861. Vol. 36, Page 257.

Source from whence derived.	Year.	Raised in Ireland.	Total Recruits	Per-centage.	Irish serving at various dates.	Irish Officers.	Total Army.
Extract from P.P. No. 42 of 1872. Vol. 37, Page 714	1861	1,659	8,138	20·38			159,003[2]
	1862	837	4,642[1]	18·03			157,113[2]
	1863	2,044	6,924	29·52			158.251[2]
	1864	2,385	11,234	21·23			134,173[2]
Extract from General Annual Return of the British Army 1872, and from the same source to 1911.	1865	2,053	12.982	15·81			137,558[2]
	1866	2,007	13.640	14·71			143,270[2]
	1867	2,360	18,006	13·10			139,316[2]
	1868	1,898	15.743	12·05	55,583		182,790
	1869	1,431	11,049	12·95	50,331		172,222
	1870	2,037	23.031	8·84	47,151		168,910
	1871	2,365	21.927	10·78	[3]		[3]
	1872	1,886	17.507	10·77	44,092	1,711[4]	180,971
	1873	2,114	16.602	12·73	42.284		179,383
	1874	2,847	20 312	14·01	40.634		178,276
	1875	2,550	18,375	13·89	39,366		175,856
	1876	3,621	29,116	12·43	39,986		181,875
	1877	3,304	28,280	11·68	39,977		179,817
	1878	3,430	28.109	12·20	39,121	1,386[5]	180.175
	1879	3,415	25.594	13·34	36.871		181,874
	1880	3,831	25,535	15·00	38,359		181,739
	1881	2,940	25,499	11·52	36 872		179.020
	1882	2,465	23.555	10·46	36,945		179,454
	1883	2,979	32,924	9·04	36,297		183,348
	1884	3.883	35,754	10·86	31 694		171,286
	1885	4,291	39,552	10·84	31,133		178,809
	1886	4,409	38,953	11·31	31,573		190,752
	1887	3,597	30.751	11·69	32,153		198,207
	1888	2,793	24,726	11·29	31,335		200,643
	1889	2,690	29.117	9·23	30,297		200,317
	1890	3,587	30.918	11·60	28,712		199,473
	1891	3,447	35,346	9·75	27,782		199,459
	1892	3,860	39,521	9·78	26,779		200,016
	1893	3,357	34.847	9·63	27,143		204,407
	1894	3,446	33,441	10·30	25.933		205,915
	1895	3,145	29,194	17·62	26.200		208,673
	1896	2,865	27,794	10·30	25.381		208,561
	1897	3,926	33 771	11·62	25,664		207,059
	1898	4,176	38,890	10·73	26,376		206,907
	1899	4,000	40,727	9·82	28,352		215,327
	1900	4,091	48,116	8·50	[6]		[6]
	1901	3,811	46,305	8·23	[6]		[6]
	1902	4,933	52,855	9·33	35,717 (1-1-03)		311,386
	19 3	2,706	29,575	9·14	31,467 (1-10-03)		267,353
	1904	3.689	42,041	8·77	30,654		267,601
	1905	3,223	35.561	9·06	27,785		254.748
	1906	2,739	35,267	7·76	25,397		245,978
	1907	2,949	33.516	8·79	22,896		232,154
	1908	3,265	35.878	9·10	23,158		235,409
	1909	2,727	32.449	8·40	22,955		237.205
	1910	2,069	25,511	8·11	22,237		236,496
	1911	2,549	28,791	8·85	21.860		237,722

[1] These figures only relate to Recruiting Districts.
[2] From P.P. No. 412 of 1867-8. Vol. 42, Page 719.
[3] Not Compiled.
[4] From P.P. No. 315 of 1872. Vol. 37, Page 431.
[5] From H. Commons Paper, No. 15 of 1879.
[6] Information incomplete owing to S.A. War, *vide* 1905 return.

APPENDIX B.

Napoleon has sometimes been accused of not understanding maritime warfare; there is no doubt, however, that at this time he fully appreciated the power which the fleets of England wielded. There is an interesting letter from him dated Paris, 23rd February, 1797, in which he describes these difficulties:

"Quelques efforts que nous fassions, vous n'acquerrons pas d'ici à plusieurs années la superiorité des mers. Opérer une descente en Angleterre sans être maître de la mer est l'opération la plus hardie et la plus difficile qui ait été faite. Si elle est possible, c'est en surprenant le passage, soit en échappant à l'escadre qui bloquerait Brest ou le Texel soit en arrivant sur des petits bâteaux pendant la nuit et aprés une traversée de sept à huit heures, sur un des points de la province de Kent ou de Sussex. S'il n'est pas possible de faire cela il faut alors renoncer à toute expédition d'Angleterre, se contenter de s'en tenir aux apparences, et fixer toute son attention comme tous les moyens sur le Rhin, afin d'essayer d'enlever le Hanovre et le Hamburg à l'Angleterre.

"Ou bien faire une expédition dans le Levant qui menaçat le commerce des Indes.

"Et si aucune des ces trois opérations n'est faisable, je ne vois plus d'autre moyens que de conclure la paix avec l'Angleterre."

BONAPARTE.

There is no mention here of any expedition to Ireland, and I think the letter bears out the view that Bonaparte's mind was full of schemes that would give him greater scope.

APPENDIX C.

The *Times* of October 8th, 1912, published the following:—

TERRITORIAL CORPS OF GUIDES.

PROPOSED NEW BODY.

The Army Council has decided to allow County Associations to raise "Corps of Guides" as part of the Technical Reserve, Territorial Force. The corps are to be composed of men who possess an intimate knowledge of localities and of local circumstances, and the members are to be available for employment in war with troops operating in their neighbourhood.

It is left entirely to the discretion of the Association whether a Corps of Guides shall be raised or not, and their organization will necessarily vary somewhat in different local circumstances, but where corps are raised the following conditions are to be fulfilled:—

(*a*) A chief guide to be appointed by each County Association to raise and command the Corps of Guides in the county, who is to be responsible to the County Association.

(*b*) District guides to be appointed at suitable centres in the county, whose functions are to gain a thoroughly detailed knowledge of their district and arrange for co-operation with the district guides in adjoining districts whether within or without their own county. The district guides

will appoint local guides to assist them in their work, and it has been suggested to the Army Council that one or more guides in each parish would be a suitable distribution.

Local guides are to possess detailed knowledge of distances, roads, paths, bridges, fords, etc., as well as water supplies, blacksmiths' and wheelwrights' shops. Military training is not essential, and guides will not be armed unless serving with armed forces. On mobilization, any distinguishing badge required by the Hague Convention will be supplied by the War Office.

A register of guides is to be prepared and an undertaking to act as a guide, if required by the military authorities, is to be signed. No grant from Army funds is to be made, but County Associations are authorized to proceed forthwith with the formation of corps.

DISCUSSION.

Colonel C. R. Burn, A.D.C., M.P.: I intend to intervene only for a very few moments, as I so thoroughly agree with the last remarks made by the Lecturer. Personally, I cannot see, especially in view of what is going on in the House of Commons at the present time, that it is possible to separate strategy from policy, because in my view—and I think the view of everybody here—our fleet has a very long coastline to guard and watch; and Ireland always has been, and I think always will be, the objective of any Power that has designs on England. We, as soldiers, must consider what the result will be on the policy of the whole of the country and of the State with Ireland as a separate and independent nation. I do not want to look at the matter from a partisan point of view in any way; my politics are well enough known; I only look at it from the point of view of what may happen under those conditions.

THE STRATEGIC PROBLEM OF AN INDEPENDENT IRELAND.

It will be granted by everybody that Ireland has been, and always must be, the objective of anyone who desires to attack this country. Ireland is a most important place to us, in fact the most important place, because it commands the waterway to the Atlantic; it controls all the routes to the Channel, the Bay of Biscay, the Port of London, and all our ports. Supposing we are at war; supposing Ireland is granted Home Rule and is a separate nation, in that country there are hundreds of thousands of people who have openly said that they will assist and welcome any foreign foe that desires to attack our country. If you have ready help inside your gates, willing to open the doors and embrace those who have designs on it, surely the difficulty in this country is magnified ten times. Now what are we going to do for the defence of Ireland under those conditions? How are we going to hold all the positions in Ireland that it is absolutely necessary we should hold? We have the Atlantic cable ending there, and every message can be tapped; we have the Marconi system installed there, and every message that comes to the stations can be passed on to our enemies abroad. If we have enemies there within our own gates what are we going to do? We have the Constabulary, surely the most splendid, the most magnificent division of infantry the world has ever seen or ever will see, and they have always done their duty nobly and manfully. But they are ten thousand men all told, and

how are we going to control the whole of Ireland and the whole of our harbours in Ireland with such a force? Think of the magnificent harbours we have there, Queenstown and Cork, not to mention Belfast and Dublin and Lough Swilly, and the rest of the harbours round the coast of Ireland. I want to know how we are going to safeguard ourselves under those conditions? How is it proposed to be done?

It is all very well to look at this as a political question, and whatever one's views on the subject may be to say, "Oh, we shall be all right; we will be perfectly secure; under an Irish Parliament none of these things will happen." But surely we know that the danger is there, and when men speak, and openly speak, and say that they intend to assist anyone who wants to come to our shores, I think it is time that we in this country did something. What I always ask is this: How are we going to combat that? What is to be done? I do not want to enter into a heated political discussion over the matter, but I would like to put those few questions to the meeting. I could dilate on them very much further, but I think I have asked sufficient questions for anyone to get up and answer, and tell us what will happen under those conditions.

Mr. O'Donnell of O'Donnell: With regard to the somewhat alarmist observations which we have just heard, I have travelled a good deal over Europe, and have been on intimate terms with military men of distinction of many nations. I have often heard the question debated whether the British Empire was vulnerable, but I confess I have never heard of a first-class military Continental nation that fixed upon Ireland of the present day as a point from which an intelligent enemy would seek to strike at England. There is really no parallel to be drawn between the dangerous character of Ireland in the sixteenth and seventeenth century, and the character of Ireland under the military progress and so forth of the present day. In the sixteenth and seventeenth century it was impossible for trade to pass out of a good part of England without coming under, so to speak, the cannon of a hostile Ireland. At that time, with the then state of armament, a mountain clan armed with the usual weapons of the time, was very nearly as formidable as one of the ordinary organizations of what were called the Forces of the Crown. But at the present time the difference between a thoroughly organized, thoroughly equipped, thoroughly disciplined Regular Army and the bravest crowd of mountaineers that ever were invented is simply immeasurable.

I do not intend to go into the political question, but I do not think myself that the Irish are such jolly fools as to fall out with their best market. Who on earth would buy our pigs and our horses if we sank England under the sea I do not know! I have also heard Continental men again and again point out that places on this earth's surface hundreds and thousands of miles from the British shores were, in the relations of the present day, a source of far greater danger to the British Empire, if they were occupied by an enemy, than the occupation of the whole of Ireland and the whole of Scotland together by a foreign enemy would have been in the days of Elizabeth. I apologize for intruding these observations upon an assembly of such distinguished experts as surround me, but at any rate I can bear this testimony, that foreign officers, who have a right to be considered experts, were of the opinion that if they were fighting England, Ireland was about the very last place in the whole of the world in which they would lock up an invading force.

Major-General Sir Thomas Fraser, K.C.B., C.M.G.: I feel very much for General May, who has given us an admirable lecture, considering the limits to which he was unavoidably confined. As you know, he was debarred from dealing with politics. That is a very right and proper rule of this Institution, and he has stuck to it correctly. At the same time my own view about Ireland is that it is impossible to judge of the merits of the question, without looking at the political considerations that have prevailed, for many centuries, in that country.

If an historian should sit down, two years hence, and, while trying to write the history of the Balkan war, that is going on at the present moment, he did not look at the political history, and aspects, of the many races of those countries; the view that he would put forward would be extremely narrow, and confined simply to the details of the fighting. In like manner, it is impossible, in my opinion, to touch on this question at all unless every aspect of it is opened up, and I have no intention of doing that here; although I fully sympathize with my old friend Colonel Burn in what he has just said.

Mr. F. Hugh O'Donnell, who has just spoken, has an intimate knowledge of European politics, and those of Ireland, on both of which he has written luminously, and he is well qualified to present one side of the question, with which his Parliamentary life has made him familiar; but he, very properly, ventured only slightly in the direction of the forbidden subject.

My sympathy with the Lecturer is strong, because I myself turned aside, last year, from all my present occupations, to spend six months in dealing with Ireland; a country that I know well, in which my forebears lived, and fought for a very long time after leaving Scotland, and where I have, myself, served at a critical time, and for some years.

IRELAND AS AN ENEMY'S OBJECTIVE.

With regard to what Mr. O'Donnell remarked about the conviction of foreign officers that Ireland would not be invaded, I may say that, having been largely occupied with the war in France in 1871, and having also been in Turkey in 1876-77, I have, I think, met the officers of every army in Europe about that time, some of them in war; and discussed many things with them; but I have noticed among those officers, when of high rank and experience, that they are usually very diplomatic, and tend to steer clear of subjects, the dangers of which they desire we should not realize; or, if forced to speak, they, in conversation, minimize those dangers for us.

You never find a German, or an Austrian, or an Italian officer for that matter, touching, in conversation, on the question of the danger points for Britain and for her Empire. Therefore, although Mr. O'Donnell was so fortunate as to hear that nothing of the kind would take place, I venture to say that my experience points the other way. Anyhow, to use the jargon of the House of Commons, I have, "with more freedom and less responsibility," elsewhere dealt with the question in a book called *The Military Danger of Home Rule for Ireland*, and my views are public property. I know, and esteem, the military virtues of all the diverse races that people Ireland. Races differing more widely in their characteristics from each other, than the warring communities in the Balkans differ to-day; but races with one common denominator; an important one for

our Empire in the past, and for the future, namely, that they are all, in their several ways, among the most warlike in the world.

Dr. T. Miller Maguire, M.A., LL.D.: I hold that at the present moment the map on the wall does not at all convey a proper view of the situation as the gallant officer has led us to understand. We really want a map of Ireland in relation to the world at large to see that, all through in the time of the Spanish predominance; in the time when the French wished predominance; in the time when Ireland had a population of eight millions as compared with the British ten millions; at the time when Ireland had an independent Parliament—whether we look at it in the fourteenth or the seventeenth century, or the nineteenth century—Ireland has occupied a flank position with regard to the whole of the British Empire which cannot be ignored. It is and was a predominant Atlantic strategic point. I am sure that Mr. O'Donnell, an Irish patriot—and, I trust, not looking at Ireland from the narrow and miserable point of view of an Ireland separated from the United Kingdom, but an Ireland glued to the United Kingdom, and helping the United Kingdom as some of his ancestors did in British ranks, and as many members of his faith did during the Peninsular War—will agree that, as Ireland is one of the best horse-breeding countries in the world, that for that purpose and that purpose alone, in the opinion of numbers of European States, Ireland would be worth having under an experienced ruler, and not under a set of paltry vote-catching politicians, to whose miserable manœuvres we are not even allowed to refer.

STRATEGIC VALUE OF IRELAND.

Now I come to another point of view. Our flank positions are of vital importance in war. General May has set forth that every Western European leader of men since the days of the Plantagenets has looked with longing eyes at Ireland, and a brilliant writer in a book which I have in my hands now, and which this morning I commended to the careful study of the only eminent strategist we are supposed to possess under existing conditions, in the United Kingdom—*Armaments and Arbitration*, by Captain Mahan—has told us that not only is our country at large a matter of importance, but that every port and every zone of operations in Ireland is a matter of importance. The Panama Canal, according to Mahan, is becoming a matter of vital importance, not because it is a big thing, not because Panama is very populous or rich, but because the people who possess that spot and are determined to stick to that Canal, have a line of communication of first importance, and may command the destinies of the world. Therefore it is worth fortifying; therefore it is worth fighting for; and therefore it is a matter of Imperial consideration. If that small slice of America is worth fortifying and fighting for, surely to heaven, even if there was no important question to be considered in regard to Ireland except its flank position, it ought to make it a subject of as careful study to every Englishman as, say, Agadir. If Agadir was a vital matter, and we were going to risk the lives of some hundred thousand of our people, and were willing to risk 100 millions of money only last year about it—if Agadir was of vital importance as a position on the West coast of Africa, what about Cork? Why, Cork is worth a thousand Agadirs. Take not only Cork but Limerick and Lough Swilly or the nascent greatness of Belfast. I do not care whether one is a loyalist of the North or a dis-

loyalist of the South, each of those flank positions is worth twenty Agadirs.

With regard to Ireland and strategy, there is not one German soldier that I ever heard talk—and I have heard a great many—that did not tell me that he considered the harbours of Ireland valuable beyond compare. If the harbours of the Adriatic are valuable now, what about the Irish harbours. Is the Adriatic not of great importance to every nation with Mediterranean and Asiatic interests? Are not some races only too ready to fight now with regard to the Adriatic harbours? Surely if one small port in the Adriatic is at the present moment occupying the attention of every intelligent man and woman in Europe, all these splendid strategic bases in Ireland ought to be kept in mind, quite apart from their commercial value. I say that every Irishman ought to be alive to the gravity of the situation. If England falls, Ireland will fall most decidedly. I will go further and say that if England cannot maintain her international eminence relatively to every other nation in Europe, all European civilization will be upset.

Admiral The Hon. Sir E. R. Fremantle, G.C.B.: I should like to say a few words chiefly from the naval point of view. I venture to think that whatever may be the heading of the lecture, "Ireland and National Defence," it is Hamlet with the principal part omitted, because unquestionably the most important part of the defence of Ireland is the naval part.

We have on the West of England a bulwark, and that bulwark at the present time is in our hands, and those magnificent harbours which God has given us on that side are of the greatest value to us. If anybody reads Lord Barham's correspondence which has been recently published he will see how we always had a strong squadron under an Admiral at Cork, and his great object was to convoy the ships coming from the westward. The necessity for that has increased twentyfold since his day. I would also remark that we have now, in addition, all our telegraphs from the Atlantic coming over Ireland, and we have in consequence far more dependence upon that country for our protection than we ever had before. Under those circumstances I cannot understand why we should allow a chance of that country being hostile to us.

This lecture did, I think, with deference to what the Chairman and other speakers have said, indirectly at all events, point to Home Rule. It assumed that there would be a union of hearts, and that is the whole case for Home Rule. The Lecturer said, properly enough, that it was necessary for our strategy that the feeling of the people should be in accordance with that of those who were acting in a military capacity. I grant it. But there are occasions on which Governments are forced to take measures which may not be in accordance with the wishes of the population, assuming that the wishes of the population are not in accordance with those of the Government. They are bound to take those measures to support the national position. Such a case occurred in the trouble between North and South in America, and in this connection I may refer to an argument that is frequently used in this country by those who are in favour of Home Rule.

They say that because three-fourths of the people are in favour of Home Rule therefore they should have it. That argument is often used, I think; I have seen it in print, and I can point out where the print is.

Supposing, for the sake of argument, that nine-tenths of the people of the Isle of Wight wanted Home Rule, would you grant it? Unquestionably in the Civil War in America something like nine-tenths, or more, probably, of the Southern States asked to be separated from the United States. The United States decided that they would retain the Southern States, and they did so by force of arms, in spite of the wishes of the Southern States.

Under those circumstances I myself am not inclined to leave things to chance. Nelson said that something must be left to chance, but that was under different conditions. This is a sort of chance which we are not justified in leaving in doubt, if we are determined to hold our position in the world as an important Empire. As to whether Home Rule or any other similar arrangement is likely to make friends for us in the West of Ireland (which so far as one can ascertain from the speeches which you can read every day in the papers is still hostile), I for one, looking at the matter from a strategical point of view, looking to the value of our commerce, looking to the value of our telegraphs and telegraph communications, and looking to the interests of the British Empire, should not be willing to leave to the arbitrament of a possible improvement in our relations with the sister isle.

There is one question that I should like to ask which perhaps the Lecturer will answer. I do not quite understand what he says on page 16 about Hippisley. I cannot help thinking that that is a considerable exaggeration, especially as it does not agree with the table on page 17. In Lord Barham's correspondence you will find several letters about incipient treason of Irishmen in the British fleet about that time—about 1805. The proportion of Irishmen in those ships was very small, apparently.

Colonel C. E. Yate, C.S.I., C.M.G., M.P.: I am very pleased indeed to be called on to follow Admiral Fremantle, because I had the pleasure of following him at a big City dinner last night, and I hope often to have the same pleasure. The first remark I would like to make this afternoon is to offer the thanks, not only of myself and of all the members of this Institution, but of the country generally, to Sir Thomas Fraser for that excellent book, which he so modestly referred to, on *The Military Danger of Home Rule For Ireland.* We all derived the greatest encouragement and information from that book, and I am sure the whole country owes Sir Thomas Fraser a debt of gratitude for the trouble he took in writing it.

Looking at Ireland at the present time and under present circumstances, it is difficult to look at it purely from a military point of view and not from a general point of view. There are proposals before us at the present moment to hand over not only all the post, but all the telegraph services in Ireland. We all know that a large proportion of our cable termini and a great number of our wireless stations are on the West coast of Ireland, and we all know how terrible it would be, supposing we were at war with a foreign Power, and our Expeditionary Force was abroad, and we were fighting for our lives against some foreign foe, if we suddenly found we had not complete control over those wireless stations and cable termini on the West coast of Ireland. How easily our communications might be interrupted under those circumstances; how easily the communication of the Navy with the various

ships might be interrupted; all sorts of things might be interrupted; and we know what a danger there would be if once complete control of those services came into other hands.

It is no good going back to ancient history, but go back simply to 1867. Supposing we were at war, and there was a sudden Fenian influx into Ireland the same as occurred then; I ask you to bear in mind how easily a little influx of that sort might upset the country. That is not an impossibility, because, mind you, similar things happened in the Boer War. We saw Irish Brigades turned out, equipped, and sent out to fight against us in South Africa. No Irish Parliament in the world could prevent the same sort of thing being done again. Those are things that we have to look forward to in the present condition of Ireland. There are dangers that loom before us, and dangers against which measures ought to be taken.

THE IRISHMAN AS A SOLDIER.

I see that the Lecturer, in the concluding part of his paper, says that he hoped the time will come when we shall have a far larger number of Irishmen in our ranks. His actual words are, "I look forward to the time when it may be possible to invite Irishmen to come forward in greater numbers and prepare themselve to play their part in the great cause of national defence." That is an ideal in which we all concur and which we all most urgently desire. There is no better soldier than the Irish soldier. We have had him fighting with us most gallantly many times in the past. I daresay many of you know he is a little difficult to deal with sometimes in the times of peace, and we can all remember, or the older ones of us can, the songs of our youth, about the Roscommon Militia, and other gay Irish corps of those days. But when it comes to the real business, the day of battle, we do not want a flock of tame sheep to drive in front of us; we want a line of daredevils who will follow behind us where we are ready to lead them, and of such is the Irish soldier. We want to see him increase in numbers in our ranks in every possible way. I am sorry to say the numbers are not increasing in Ireland as we would like to see them do. I put a question on that subject the other day in the House, and the Secretary of State for War said he thought it was going on in proportion to the population, but I rather have doubts about that myself. And remember at the present moment the Irish soldier has a tremendous lot against him. I have here with me by chance to-day, as an illustration of the difficulties that have to be contended with, a copy of a proclamation, which was posted up on the walls of Tralee last month. This sort of proclamation is not good for encouraging enlistment. This is what it says:—

> "Irishmen! It is absurd to talk against British tyranny in Ireland when you join, or let your sons, brothers or friends join, the British Navy and the British Army. If there were no British Navy and British Army there would be no British Government here to oppress you. If there were a weak British Navy and British Army the British Government would not be able to maintain the infamous Union under which your industries have been ruined, your soil given over to the bullocks, your population cut down one half and your taxation increased fivefold. There would be a weak British Navy and British Army if the Irish did not enlist."

I need not quote it further. These things are posted up on the walls of Ireland at the present time, although it must be a minority who post up this sort of thing. We want to encourage in Ireland a majority who would put down this sort of sedition on the part of the minority. How long it will be before we can look forward to that state of things I do not know, but I think we must have that done before we can hope to get a very largely increased number of Irishmen in our ranks. It is a thing to hope for and try to encourage in every possible way we can. I am sorry that I was not able to get here in time to hear the Lecturer read his paper, and I apologize for my absence, but I could not get away from the House. I have perused the proof though with much pleasure, and I congratulate him most cordially on it, if I may be permitted to do so. I can only say the subject is one of the greatest interest at the present moment, and I hope the discussion on it here to-day will have some permanent good.

The Lecturer, Major-General E. S. May, in reply said: Ladies and gentlemen, I propose to say very little, because I have already said a great deal. I do not think that anything that fell from Colonel Burn calls for notice on my part. As regards what Mr. O'Donnell said, I think that the foreigners to whom he alluded meant that if they were strong enough to take Ireland they would go and take England, because the ability to take Ireland would imply a superiority of naval strength on their part, and in that case they would naturally go for the most decisive point at once. I think that is well understood. I want to make it clear what I really did say. What I said was, that with Ireland not firmly in our grasp she would constitute a menace to our security which would be intolerable —intolerable, that is to say, from the standpoint of the strategical influence as regards our trade routes, with which her geographical situation endows her. I was contemplating the danger to our trade routes that her flank position constituted, and I need add nothing to what Dr. Miller Maguire, Sir Thomas Fraser, and other speakers have told us on that point in corroboration of my views. There is one quite small matter on which I would like to cross swords with Mr. O'Donnell for one moment. I understood him to say that he thinks there was not much difference between the trained soldier and the untrained soldier in the time of Queen Elizabeth, or even after. Personally, I think there has always been an enormous difference, because one was disciplined and the other not, and in my opinion discipline is the whole foundation of the military art. How was it possible for Cæsar to carry through the great conquests that he gained over the barbarians, whom he encountered with weapons practically equal to those they bore. The Legionaries fought with swords and javelins, and the others fought with similar weapons, too. Again, I do not think I could quote a better illustration of the value of discipline and the difference between highly trained and untrained men than the illustration I gave of Humbert, who, with a thousand men, practically held the whole of Ireland in terror, after he had defeated Lord Lake, who was a distinguished and gallant General, at the head of 1,700 or 1,800 men at Castlebar. He inflicted a tremendous defeat on the British simply because he commanded very highly trained French troops, while his opponents were chiefly militia.

As regards the remarks of Admiral Fremantle, I must confess that I was in a great difficulty when I was asked to give this lecture last summer. Admiral Fremantle said that leaving out the Navy was like

writing Hamlet and leaving out the Prince of Denmark. But it seemed to me that to give a lecture on Ireland and leave out politics, as I was determined to do, was really leaving out Hamlet, and that was my difficulty. What I thought I could do when I consented to give the lecture was this. I knew that Mahan and several other naval authorities had written all about the naval side of the question, and I thought the most useful thing I could do—because I could only speak for an hour—was not to say too much about the naval part of the subject, but to dwell rather on the lessons of history, the help which Ireland was and is to us, and on a matter that to me, at least, was of interest, namely, the large number of Irishmen who used to come forward to fight our battles, and the question of obtaining their services in the future. Therefore I devoted myself chiefly to the historical part and to the army aspect of the question.

As regards another remark of the gallant Admiral's, I think he accused me of being a Home Ruler. I am quite happy that he should think I am one; I am delighted; but, I will add, that wild horses will not drag from me the secret of my political opinions. For, as a soldier on the Active List, I assure you, gentlemen, I have none. As regards what Colonel Yate said about the Proclamations, I have seen a good many, and I have seen things more regrettable still. One naturally feels disgusted at these things, but I look forward to the time when education and the spread of knowledge will perhaps make people take a more sensible view. And though those Proclamations are really very much to be regretted, I can say this, that so far as I know, I do not think they produce a great deal of effect, because I think the Irishman is quite clever enough to see through them.

The Chairman, Lieut.-General T. H. Bor, C.B., C.M.G.: Ladies and gentlemen, I do not propose to say anything about the subject of the lecture or the discussion which has followed it. But I would just like, as regards its naval aspect, to invite attention to the three most excellent and instructive articles which appeared in this month's issue of the *United Service Magazine*.

I am sure I shall only be expressing the opinion of all here when I say that the Lecturer has given us a most interesting and instructive Lecture. He has given us many ideas to think out in the future, and the lecture has given rise to a very interesting discussion by many authorities and influential men. On your behalf, as well as my own, I offer Major-General May a very hearty vote of thanks for the trouble he has taken in coming here to give us this lecture.

NAVAL AND MILITARY CALENDAR.

DECEMBER, 1912.

30th Nov. (Sat.)	Launch of third Austro-Hungarian Dreadnought "Prince Eugen" at Trieste.
3rd Dec. (Tues.)	H.M.S. "Chatham" commissioned at Chatham.
" "	Signature of Armistice between Turkey and the Allies (excepting Greece.)
4th (Wed.)	Announcement in House of Commons of increase in Navy pay.
5th (Thurs.)	Pronouncement in Canadian House of Commons of the Dominion's Naval Policy.
" "	Napoleon quits the *Grande Armée* at Smorgoni, 1812.
8th (Sun.)	Renewal of Triple Alliance was officially announced in Vienna.
9th (Mon.)	British protest against Panama Canal charges presented at Washington.
10th (Tues.)	H.M.S. "Centurion" in collision with S.S. "Derna" off Portland Bill.
" "	Capture of Bushire, 1856.
11th (Wed.)	Murder of Capt. A. B. Eckford by brigands near Shiraz.
12th (Thurs.)	Death of Prince Luitpold, the Prince Regent of Bavaria, aged 91.
" "	First Anniversary of the King-Emperor's Durbar at Delhi.
14th (Sat.)	"Terra Nova," relief ship, sailed from Christchurch (N.Z.), for Antarctic.
16th (Mon.)	H.M.S. "Exmouth" paid off at Portsmouth.
" "	Naval skirmish outside the Dardanelles between Greek and Turkish fleets.
" "	First meeting of the Balkan Peace Conference at St. James' Palace.
17th (Tues.)	H.M.S. "Albemarle" commissioned at Portsmouth.
21st (Sat.)	H.M.S. "Natal" left Portsmouth with body of late American Ambassador.
" "	Thames Ironworks closed down.
22nd (Sun.)	Bombardment of Tenedos by Turkish Torpedo craft.
" "	Surrender of Turkish garrison of Mitylene.
23rd (Mon.)	Attempt to murder the Viceroy of India, during the official entry into Delhi.
24th (Tues.)	Dutch Torpedo-boat destroyer "Lynx" launched at Flushing.
27th (Fri.)	Death of Admiral Sir William M. Dowell, G.C.B., aged 87.
30th (Mon.)	Treaty between Yorck and Diebich at Poscherun, 1812.
31st (Tues.)	Naval Aviation station at Port Victoria established.

A JAPANESE WINTER EXERCISE.

By MAJOR K. HAUSHOFER (Bavarian Army).

(Translated, by permission, from the *Militär Wochenblatt* Supplement No. 1 of 1912).

NOTE.—The following translation illustrates admirably various tactical ideas prevailing in Japan as the result of experience gained in the war against Russia.

It likewise shows what valuable instruction can be acquired by means of exercises with small forces and partly improvised formations; and despite inclement weather conditions similar to those which usually prevail during the "winter training season" in Great Britain.

The criticisms by the author—an expert foreign observer—constitute a valuable addition to the instructive events which he narrates.—Ed.

THE winter exercises held by the 16th Division between the 12th and 16th February, were designed to include the following events:—On the first day, an encounter battle on the Tamamizu—Tanabe—Yawata road; on the second day, an attack by the Red Force on a Blue position in the hills; on the third day, retirement of Red across a river pursued by Blue; and on the fourth day, the active defence of the line of a river by Red. (See general map).

The situation on which the exercise was based was as follows:—

GENERAL IDEA.

A Blue army is holding the line Yokoogi—Mukomachi.
A Red army is advancing via Fushimi against Blue.

Special Idea. Blue.

Morning of the 12th February.

The Blue commander has decided to retire to the heights of Otokoyama and Yamazaki and await the arrival of reinforcements before accepting battle.

Upon receiving information that a small force of the enemy is advancing down the Kizu Valley, the Blue commander detaches the force detailed below to protect the rear of his army:—

1st and 2nd Battalions of the 9th Infantry Regiment; 2nd Squadron of the 20th Cavalry Regiment; 2nd Battery of the 22nd F.A. Regiment; and two sections of the 2nd Company of the 16th Pioneer Battalion.

This force, which is henceforward referred to as the Kizu detachment, had reached the bridge south of Yodo at 12 noon. Its commander had received information that the Red Force, which had hitherto been advancing on the right (east) bank of the Kizu, had reached the neighbourhood

of Tamamizu, and was preparing to cross to the left (west) bank. The inhabitants reported that the Yawata—Matsui road was passable for field artillery.

Special Idea. Red.

The Red Kizu Detachment (as below) had received orders to operate against the rear of the Blue army; it had advanced on the east bank of the river Kizu as far as Tamamizu, where it had crossed to the west bank on the 12th February. The crossing had been completed by noon. The Asasano—Matsui—Yawata road was reported to be passable for field artillery.

1st and 2nd Battalions of the 53rd Infantry Regiment.
Half the 1st Squadron of the 20th Cavalry Regiment.
1st Battery of the 22nd F.A. Regiment.
One section of the 2nd Company of the 16th Pioneer Battalion.

The total forces engaged in the exercise were, therefore, quite small. There were altogether two regimental staffs, four infantry battalions, two cavalry squadrons, two batteries of field artillery, one company of pioneers and eight machine-guns; second-line transport was represented by detachments of A.S.C.; all units were at war strength,[1] with their full allowance of pack ammunition.

The Directing Staff consisted of General Oi, commanding the 19th Infantry Brigade, and his two staff officers; in addition the 16th Division was given its "I b"* General Staff Officer. My Austrian friend, Captain von Winternitz, and I were attached to the 16th Division. On the 12th February the Directing Staff left Kioto for the manœuvre area.

All officers who were not absolutely required for training the recruits in the garrisons took part in the exercise, and were employed as umpires, compensation officers, to replace casualties among the commanders, or as spectators.

The weather was slightly frosty; the sky was generally clear and the wind keen; these conditions continued almost till the end of the exercise, but at noon on the 15th there was a blizzard, which was followed by a change of the weather.

The four days were utilized to the very utmost, having regard to the limits imposed by the physical endurance of the troops; the manœuvre area was comparatively small, but it was well selected and afforded plenty of scope for interesting situations, which were exploited to the utmost by the manœuvre scheme. The result was to give the older men of the division and the majority of the officers a thorough "Refresher," in the middle of the winter, without interfering appreciably with the training of the recruits.

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[1] In order to bring units up to war strength some reservists were called up to each regiment from the place at which it was stationed.

* The expression "I b" is used in the German Army to designate one of the two officers of the 1st (General Staff) Section of an Army Corps Staff.—Ed.

In order to reach the places of assembly laid down in the scheme, the infantry had to proceed by route march 12½ miles from Fushimi, nine miles from Nara and 12½ miles from Otsu. This is in accordance with the approved Japanese tradition of taking the edge off the marching powers of the troops before the manœuvres begin, in order to test their energy and capacity for endurance.[1]

At 12.30 p.m., by which time the concentration had been completed, the troops had rested, and were ready to move off. The situation was then as portrayed by the following order:—

RED.

DETACHMENT ORDERS.[2]

Tamamizu, 12th Feb. 12 noon.

1. No news of enemy.
2. The detachment will march to Yawata, towards which place the independent cavalry advanced at 10.30 a.m. this morning to reconnoitre.
3. The infantry point of the advanced guard will move off at 12.30 p.m. along the Tanabe-Yawata road upon Yawata.
4. The left flank guard will move off at the same time as the advanced guard and proceed from Tanabe, via Matsui and Uchisato to Yawata.
5. The main body will move off at 12.30 p.m. from the centre of Tamamizu village.
6. Second-line transport will follow the main body at 1,100 yards distance.
7. The G.O.C. will ride at the head of the main body.

ORDER OF MARCH.

Independent Cavalry.—1st Squadron 20th Cavalry Regiment.

Advanced Guard.—1st Battalion of 53rd Infantry Regiment (less Nos. 3 and 4 companies); four mounted men; one section 16th Pioneers.

Left Flank Guard.—2nd Battalion 53rd Regiment (less No. 2 company); two machine-guns.

Main Body.—Nos. 3 and 4 companies 1st Battalion 53rd Regiment; 1st Battery 22nd F.A. Regiment; No. 2 company 2nd Battalion 53rd Regiment.

NOTE.—No infantry may cross the railway north of Tanabe before 2 p.m.

Dictated to commanding officers at Tamamizu.

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[1] Thus, for example, the inspection of companies in tactical training is usually arranged as an incident in a 25 mile march.

[2] For Director's criticism on these orders see page 59.—Ed.

The Blue commander had likewise resolved to advance. His orders were that the advanced guard should start at 12.30 for Tanabe via Yawata, the main body following at a distance of 770 yards. On reaching Yawata a flank guard consisting of two companies was to diverge from the main body and move via Matsui on Takigi.

NARRATIVE OF THE OPERATIONS.

The Independent Cavalry of the opposing sides, having been allowed to move off at 10.30 a.m., came in contact between Yawata and Osumi.

The Red advanced guard, which I accompanied at the commencement of the day's operations, sent out some infantry patrols at the double on a broad front to prevent the hostile cavalry from approaching within view. A little after 2 p.m., the point of the Red advanced guard came in contact with the Blue cavalry on the narrow plateau between 200 and 500 yards south of Asasano; the Red advanced guard hastened to deploy, and occupied a trench extending on either side of the road, 500 yards south of Yawata; from this position it was able to open an effective fire against the Blue advanced guard, which was debouching somewhat carelessly from Yawata.

Some weak flank guard detachments and patrols were engaged a little farther to the east, in an independent struggle for the river dyke, which is as much as 30 feet high in some places.

The road leading through Yawata was in such bad condition that some pioneer work was necessary before the Blue guns could get into action, which they finally did under fire of the guns and advanced guard of Red, in a position on the south-west border of Yawata (which, in real war, not a man would have reached alive). An encounter battle now commenced.

The energetic Blue commander quickly deployed his main body and sent it forward through the fields south-west of Yawata; meanwhile Red advanced by his left between Osumi and Matsui; the infantry, moving in close formation, sank deep in the marshy rice fields, and at the same time came under fire from the Blue machine-guns.

Great effect is allowed in Japan to surprise fire by machine-guns from a flank, on account of the general confusion which fire of this sort was found to produce during the late war.

The position of Red at 3.30 p.m. when "Stand Fast" was sounded, was by no means favourable, although they had established a strong firing line along the embankment on which the road is carried to the east of Matsui.

At 5 p.m., after a long conference, operations were resumed. Red retired via Tanabe; Blue pursued half-heartedly and allowed

themselves to be checked by fire at the embankment 200 yards south of Asasano; they halted again at the railway north of Tanabe, and at a place where an embankment is carried over the road at the latter place. The greatest eagerness in the pursuit was shown by the Blue battery commander with his mounted party; the machine-guns followed him at a rather slower pace. It was not until the evening that Blue halted at the embankment south of Tanabe in accordance with orders received from Army Headquarters.

Red had fallen back to Kodo, where they were turning to face their enemy, when the latter desisted from the pursuit. The Red commander had just given orders for his force to occupy close billets, in immediate readiness for action, when he received information from his army commander that he was going to begin the attack on the Blue Army on the 13th, on which day his left flank would move against the Mino Hill south of Yawata; and that the task for the Kizu Detachment was to drive back the Blue troops opposed to them, and then to co-operate on the extreme left flank of the Red Army's attack.

It was at first proposed, in pursuance of this order, to gain possession of Tanabe by a surprise attack in the darkness, but the patrols, which had been gradually working their way round the enemy's thin screen of posts, reported that neither Tanabe nor Takigi were occupied, and that the Blue outpost line was really much farther to the north, south of Asaoka and Asasano. The Blue detachment had received news after the action, from the 16th Division (on the right flank of the Blue Army) that it was falling back that very night to take up a defensive position south of Yawata. Shortly afterwards the following extract from Blue Army Orders was received, dated 12.30 p.m.:—

> "1. On the 13th inst., the 16th Division will occupy the line from (right flank) hill 880 yards south of Minoyama —Village of Minoyama—Hill Otokoyama; on the 14th this division will again advance to the attack.
>
> "2. The Kizu Detachment will to-night occupy a position to cover the retirement of our main army; early to-morrow it will move to join the right wing of the 16th Division, and will entrench itself there, facing east."

The effect of these orders was that Red was only followed up by a portion of the Blue Force as far as the dyke south of Tanabe, where a false outpost line, which deceived Red for a time, was taken up by cavalry and patrols. Judging rightly that the first task was to gain time to fall back towards the north-west, the Blue commander now issued the following orders:—

BLUE.

DETACHMENT ORDERS.

Asaoka, 12th Feb., 6.30 p.m.

1. The enemy has been driven back through Tanabe, and has taken up quarters for the night at Kodo.

2. Our detachment is quartered to-night in and around Asaoka.

3. The 1st Battalion 9th Infantry Regiment will furnish the outposts; reserve will be at Asasano; right flank will extend to the tea-plantation 770 yards south of Asaoka and the western slope of the hill at that place; left flank will be at the ford by the gap in the dyke opposite Mizushi, and will guard by frequent patrolling against any movement from the direction of Tanabe.

4. The main body will occupy close billets as under:—

Staff, machine-guns, 2nd Battalion of 9th Regiment, less No. 2 company at Asaoka; No. 2 company 9th Regiment at East Ozumi; No. 2 squadron 20th Cavalry Regiment and No. 2 company 16th Pioneers at West Ozumi; 2nd Battery 22nd F.A. Regiment at Matsui.

Major T. will be commandant of Asaoka.

5. The alarm post will be in the fields south-east of Asaoka.

6. Rations will be issued from the wagons of the second-line transport (*Grosse Baggage*).

7. I shall remain at Asaoka, where orders will be issued at 9 p.m.

By 9 p.m. the troops on both sides had received their evening issue of supplies (or the amount required to complete it) and had turned in under the protection of their outposts, who were kept busy all night.

The commander of the Red Kizu Detachment issued the following orders for the 13th February:—

RED.

ORDERS FOR THE KIZUGAWA DETACHMENT.

Headquarters, Kodo, 12th February, 9 p.m.

1. The foremost protective detachments of the enemy opposed to us, are on the line of the high river bank south of Asasano—Asaoka. The main body of the enemy has fallen back and apparently intends to resist our advance in the hills at, and to the north of Minoyama.

The Kizugawa Detachment will to-morrow advance further along the left bank of the Kizu.

2. To-morrow (13th February), the enemy will accordingly be attacked afresh; after defeating him, the detachment will establish touch with the Red main body.

3. The 2nd Battalion 53rd Regiment, less two companies, will occupy the railway embankment north of Tanabe at 5 a.m. to-morrow; the machine-guns will accompany this battalion.

4. At the same hour the 1st Battalion 53rd Regiment and two companies of the 2nd Battalion 53rd Regiment, under the command of Major F., will be assembled north of Tanabe.

5. At 5.30 a.m. the battery will be "at the north of Tanabe" (by this was meant in action at the northern end of the village); one section of pioneers will accompany the battery.

6. The cavalry squadron will endeavour to reconnoitre along the left bank of the Kizu, and will cover our right flank.

7. Communication is to be established from Tanabe *via* Nagaike to the road leading from Nara.

8. Second-line transport will remain till midday to-morrow on the right bank of the Kizu near Tono, to be halted in order of units as given in the order of battle.

9. I shall be at the cross roads in the centre of Tanabe at 5.30 a.m.[1]

The intentions of Blue were also modified in many respects. The original intention had been to move off quickly to the north-west an hour before daybreak, and then to take up a position for a delaying action in the neighbourhood Asaoka—Osumi, the rearguard remaining south of Asasano; finally, it was decided to fall back on the heights 200 yards south-east of Minoyama, and to hold on there, linking up to the 16th Division. With this object, orders were issued at 2 a.m. on the 13th February that the battery was to fall back through Matsui and was to be formed up at 5 a.m. on the hill 880 yards north-east of Nagao; the 2nd Battalion 9th Infantry Regiment was to be at 5.20 a.m. at the pond 500 yards north-east of Nagao; and the 1st Battalion 9th Infantry Regiment was to be at 5.40 a.m. at the ponds 660 yards south of Minoyama (see map). One company of each battalion was to be left behind to mask the retirement and to afford some support to the cavalry which was going out to reconnoitre.

Blue carried out his retirement on to the selected position with great skill, and succeeded in completely hoodwinking the enemy;[2] the heights south of Matsui were found to provide good positions for rearguard actions.

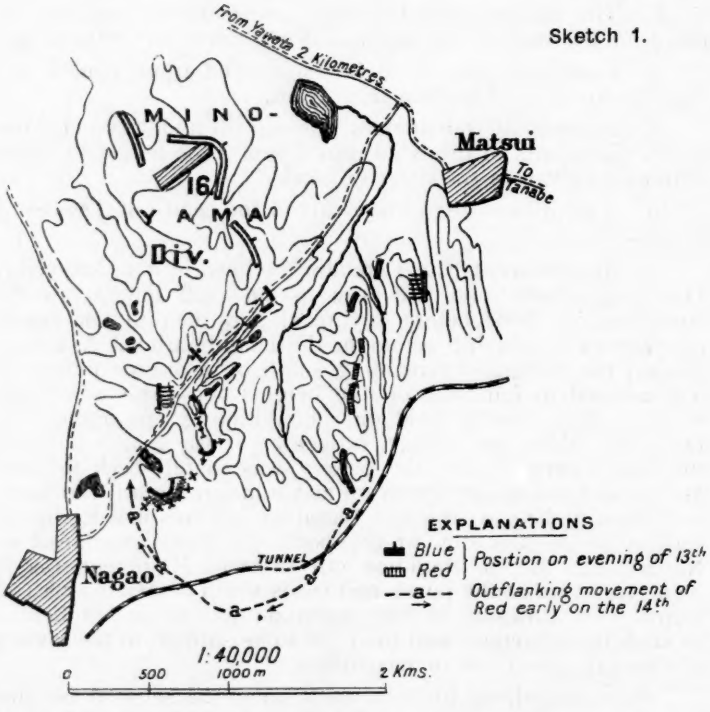
The Red commander, unaware of the retirement of Blue, kept four of his guns in action to the west and two to the east

[1] Unfortunately, by order of the Directing Staff, all operations were postponed till two hours later than the times prescribed in the orders.

[2] See Director's criticisms on page 59.—Ed.

of Tanabe; his remaining troops he kept in the positions laid down by the orders, up to 7 a.m., without having been able to decide on any definite action. He then advanced astride of the road, and was enticed by the Blue rearguard, which played the rôle of a delaying force with consummate skill, into the country south-west of Matsui. Here all touch was lost with the Blue troops, who vanished suddenly and completely. At this juncture, Red received information that there was a strong Blue position north-west of Minoyama; and, further, that the advanced troops of the Red main body (which was now moving to the attack) would not appear north of

Sketch 1.



Matsui before 4.30 p.m. The Red commander realized, therefore, that he must proceed with caution in regaining touch with the enemy who had so mysteriously disappeared; meanwhile, he took steps to secure his position at Matsui and on the ridge south of that place, facing towards the west. (See sketch).

In the meanwhile, we spectators had made a detour, under the guidance of a General Staff Officer, and had reached the new defensive position of the Blue detachment. The ground,

which was the scene of the ensuing operations, presented all the difficulties of mountainous country, though the actual altitudes above sea level were relatively small; it bore a striking resemblance, as was more than once observed by the Japanese officers, to the battlefield of Yang-tzu-ling in the Manchurian mountains.

During our ride we saw the Red advanced guard regain touch with the enemy; in so doing it was on one occasion much exposed to fire from the strong Blue position. The Red infantry patrols were soon busily engaged, and worked well. The heavy ground presented great difficulties to the advance of the guns; the artillery reconnoitring parties selected a position on the hill 550 yards south-west of Matsui, but before it could be occupied the pioneers had to make a track over 200 yards of difficult ground; when this had been done the position was certainly an excellent one for artillery.

The Blue defensive line, which we reached about noon, by way of a steep narrow valley, was supposed to constitute the extreme right of the division on the right flank of the Blue Army. The front, which was about 1,540 yards in extent, was only occupied, in the first instance, by one battalion of infantry, four machine-guns and one battery; the latter was employed in dispersed sections, but was kept under one control.

There was a double system of telephone communication between the various command posts and intelligence collecting stations (*Meldestellen*); and also to the advanced posts, to the commander, and to the reserve. The strength of the last named was one battalion; it was at first judiciously stationed in rear of the right flank, but later, in view of the enemy's preparations for a strong frontal attack, it was moved to a position in rear of the centre.

Blue were allowed plenty of time to strengthen their position; they were thus able to dig deep trenches, and to construct command posts, gun emplacements, covered communications, screens and dummy trenches; wire entanglements and abattis of pointed bamboos (the latter as dangerous in peace as in war) were also constructed on a large scale. By 3.30 p.m. the defensive position had become a perfect specimen of the art of field fortification; the work had been well executed, and the cover provided was good and substantial. Nevertheless, taken as a whole, the position suffered from the defect that the flank was too far advanced. In spite, therefore, of all the local strength afforded by the wire entanglements and pointed bamboo stakes the flank was unduly exposed to an enveloping movement.

The effects of the orders issued by the Red commander for the further operations that afternoon began to be visible about 3.20 p.m. These orders were as follows:—

RED.

ORDERS FOR THE KIZU DETACHMENT.

Hill one kilometre south of Matsui, 13th February, 2 p.m.

1. The enemy is occupying a strong position on the Matsui—Nagao road extending for about 440 yards on either side of the column. Some reserves are in the neighbourhood of the pond 550 yards north of Nagao. The positions of his defences and outposts have not yet been precisely determined.

2. To-day the detachment will maintain its present position, in rear of which the troops will bivouac. We will await the advance of our main army (which is to engage the enemy to-morrow) and then attack at daybreak to-morrow.

3. The 2nd Battalion 53rd Regiment (less one company) will advance on both sides of the valley and make good the ridge.

4. The 1st Battalion 53rd Regiment will hold the line from the mountain with the pinewood as far as the railway culvert near the tunnel.

5. The cavalry will advance towards Matsui in the evening and will establish touch with our main army, which is advancing north-east of that place.

6 The 1st Battalion 53rd Regiment will protect the artillery position and bivouac.

7. The section of Pioneers is placed at the disposal of the 1st Battalion 53rd Regiment, with which it will bivouac.

8. The machine-guns will remain in their present position.

9. Supplies are being assembled at Matsui whence they will be sent up to the troops. Separate orders are being issued on this subject.

10. My position is at the bivouac of the 1st Battalion 53rd Regiment. Issue of orders will be at 9 p.m.

The first perceptible result of these orders was that between 3 and 3.30 p.m., two or three Red companies advanced in the valley and along its northern edge against the weak spot at the north-east wing of the Blue position, and proceeded to outflank and enfilade a very badly-sited fire trench. These companies had crossed 660 yards of extremely difficult ground in a remarkably short time; they were now taken in flank by the enemy's guns, and, at the same time, were engaged by his reserve which had hitherto been stationed in rear of his right flank; they were therefore compelled to retire, but their daring advance, taken in conjunction with the entrenching work which was being carried out by Red in front of the position, had the effect of drawing Blue's attention more towards his centre, in rear of which he now stationed his reserve.

In the later part of the afternoon the Blue commander came to the conclusion that no fresh developments were to be expected

on the 13th February, and at 5 p.m. he issued orders for the troops to bivouac on the position.

Meanwhile the attacking side had been carefully entrenching a position in front (north-west) of the bend of the railway; the intention was, apparently, to deceive the enemy as to the real objective of the attack; to occupy the position with the minimum number of troops, allowing the remainder to rest; and at daybreak to advance across some very difficult ground along the railway and thence against Nagao, in order to envelop the extreme right wing of the Blue Detachment.

The activity displayed by Red in front of the position naturally had the effect of making some action in this quarter appear probable. Blue fell into the trap, but at the same time advanced a portion of his infantry line during the night, so that, in the morning, Red found the enemy in a different position from the one that had been reconnoitred the previous evening.[1]

The Director was justifiably proud as he showed me over the Red entrenched position. The work had been executed with extraordinary thoroughness in a remarkably short time; the trenches were well sited and every contingency had been provided for. The number of troops required to occupy the position had been reduced to a minimum; the remainder were accommodated in bivouacs nestling into folds of the ground in rear of the position. There was a well-equipped observing station, with telephone wires leading in all directions, where orders were being quietly given out for the next day's operations.

The orders in question gave a description, as full as was possible, of the enemy's position, and dealt with the question of establishing communication with the left wing of the Red Army; they then continued as follows:—

"The Detachment will to-morrow deliver an enveloping attack against the enemy's right flank.

"The 2nd Battalion 53rd Regiment, with the machine-guns, will advance at 5.30 a.m. to-morrow across the valley, and will draw fire from the position, keeping the latter under its own fire, and endeavouring to attract as large a number as possible of the enemy's troops to the front of the position; a detachment will attempt to capture the enemy's battery.

"The 1st Battalion 53rd Regiment, with one section of the Pioneers, will move at 5 a.m. by the valley east of Nagao, so as to outflank the enemy's right and attack him in rear.

"Two companies of the 2nd Battalion 53rd Regiment will follow in rear of the 1st Battalion and will be at my disposal.

"The cavalry will advance beyond Nagao and reconnoitre in front of our left flank.

[1] See under (b) of Author's criticisms.—Ed.

"The artillery will open fire at daybreak (as soon as the infantry attack begins) against the enemy's right wing and against his guns."[1]

From 4 to 4.30 a.m. on the 14th February patrols could be seen working actively before the front and left wing of the Blue position. Nothing else was visible, and the enveloping attack, which moved skilfully and silently across country, was unperceived; the proper working of the patrols in accordance with active service conditions was ensured by the presence amongst them of a number of young umpires.

Blue was fully aware of the weakness of his right wing, and had spared no pains to strengthen it; nevertheless at 5.30 a.m. on the 14th February the Red attack, advancing along the valley of Nagao (see sketch 1. a-a-a) effected a complete surprise, and brushed aside all attempts at resistance. (The eastern sky was light at this time, but the lower ground was still wrapped in darkness). Blue had altered his line of defence in the night and had pushed out two companies of infantry and some pioneers some 200 yards to a small knoll which was favourably situated for defence.

This unexpected alteration in the position caused Red some delay; the short burst of firing gave a general alarm, and the cohesion of the attack was destroyed. The Red attacking force encountered the Blue reserve, which had been hurriedly brought up, near the four small ponds on either side of the road 500 yards north-east of Nagao; hand to hand fighting would now have taken place right in the Blue artillery position had not the Directing Staff put an end to what had become an impossible situation.

Information was now conveyed by the Directing Staff to the Red commander that his main army was retiring, and that its left wing would be occupied till the morning of the 15th in crossing to the eastern bank of the Kizu River near Kamitsuya. The Kizu Detachment was to withdraw forthwith to the ground south of Terada (on the eastern bank of the Kizu River) covering the retirement of the left wing of the army and securing its left flank. (See general map).

Red were thus unable to profit by the advantage which they had just gained, though their success assisted them in the difficult task of breaking off the engagement. They retired, showing their teeth more than once, across their position of the day before, through Tanabe, to the fords of the Kizu, south of Tono and Mizushi.

Blue now gained a little breathing space, and was in a position to comply with an order received from his main army, which read as follows:—

"The Blue Army will reply to the Red attack by a counter-attack on the morning of the 14th; with this object all available

[1] See Director's criticism quoted on page 60.—Ed.

forces will be set in motion simultaneously. The intention is for the army to cross to the right bank of the Kizu at and near Kamitsuya about the afternoon of the 15th.

"The Kizu Detachment will forthwith drive back the enemy opposed to it, and will cross the Kizu River early to-morrow near Tono. It will then advance through Terada with the object of facilitating the passage of the river by the main army."

In accordance with these instructions Blue immediately gave orders for a pursuit. Three columns were formed, but they took a long time to get off and failed to co-operate. The cavalry and one company of infantry moved out some way to the south across the Fujisaka—Tanabe road. Red's retirement was, therefore, not closely pressed, and at Matsui, Asaoka, and Tanabe good opportunities presented themselves for counter strokes against the pursuing force; by these means Red gained time to draw off towards Tono and to cross the river.

The River Kizu was forded by the main body and the artillery south of Tono, and by the rearguard between Asasano and Mizushi. This was the first occasion on which troops had forded the river, and the achievement was only rendered possible by the unusually low level of the water. The actual depth in the rapid part of the stream was not more than 25 to 27 inches at the ford, but the bottom was partly mud and sand and partly loose boulders. A careless step plunged a man up to the chest in the ice-cold water. The waves surged over the guns more than once. The pressure of the current was considerable, and the main branch of the river was quite 110 yards wide.

The fording of this river in the middle of winter, as an incident in a tactical exercise which had involved at least a third of the troops bivouacking in the open, must be regarded as a notable achievement. The chief difficulty for the vehicles, in addition to the steepness of the banks, was a deep channel which runs along the eastern shore; but all obstacles were easily overcome.

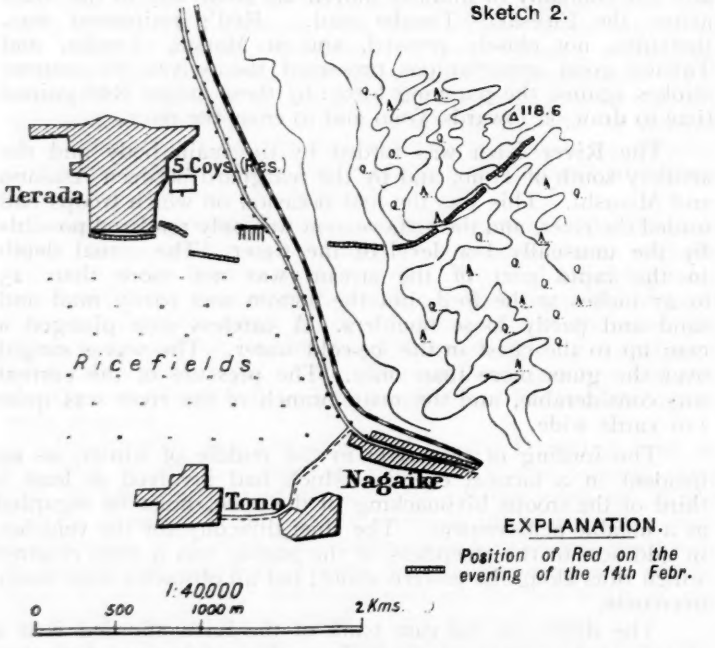
The dykes on the east bank of the Kizu afforded Red a strong position; just south of Tono these dykes receded, thus enabling a battery to be brought into action. In this position Red was finally able to check any further pursuit. As, however, the Red outpost line was now strongly established on the line of the river, it was no longer possible for the Blue cavalry and infantry patrols to cross the stream by daylight.

Leaving the battery in its position, for the time being, Red now entrenched himself in a well-chosen position near Terada. (See sketch 2). The position extended from that place, which formed a *point d'appui* for the western flank, into the hills; the front was about 2,650 yards and was occupied by seven companies, eight machine-guns and six field guns; five companies

and the pioneers were held in reserve. The 1st (skeleton) Battalion of the 1st Regiment, which had arrived at Hirakawa, was placed at the disposal of the Red commander.

The Blue Force, which had reached the neighbourhood of Tanabe, was likewise reinforced by the 1st Battalion of the 22nd Regiment, which had taken up quarters for the night at Asasano. At 4 p.m. the Blue commander gave orders for the troops to occupy close billets in Tanabe. Outposts were pushed out as far as the left bank of the river, and touch was gained with the reinforcements at Asasano.

Sketch 2.



The Blue patrols had ascertained that Terada was still occupied by the enemy, and that hostile detachments were at Tono and Biwansho. The extreme flanks of the Red outpost line were located at Asajuroku and Mizushi. The Blue commander decided to cross to the eastern bank and attack the enemy early on the 15th; orders were issued for the assembly of the Blue troops at 4.30 a.m. at Tanabe and Takigi.

The Red Force finished entrenching by 6.30 p.m., and the troops went into close billets at Terada. An outpost company was pushed forward to Tono and another to Nagaike to watch the line of the Kizu. The Red patrols had found it impossible to cross the river in the afternoon, but it was estab-

lished with the aid of telescopes from the hills near Terada that the Blue troops had entered Tanabe, but had not emerged from that place.

The Red commander, therefore, issued the following orders for the next day's operations:—

RED.

Headquarters, Terada, 14th February, 9 p.m.

1. No further news of enemy. The 1st Battalion 1st Regiment has been placed under my orders.

2. The Detachment will to-morrow hold its present position in order to cover the retirement of the main army.

3. The cavalry squadron will move off at 4 a.m. to-morrow and, in co-operation with the outposts, will secure the passages of the river between Mizushi and Asajuroku, and establish communication with the main army, *via* Tsukahara.

4. The outpost companies will fire vigorously on any Blue troops attempting to cross the river. If compelled to retire by superior forces, the right outpost company will fall back first of all to our right flank, and then to the reserve; the left outpost company will fall back to the left flank of the position.

5. At 5 a.m. to-morrow the outposts will re-occupy their day positions. The O.C. 1st Battalion 53rd Regiment will resume command over his outpost company as soon as the latter falls back from the line of the river.

6. The 1st Battalion 1st Regiment will be assembled at 5 a.m. near the reserve.

7. The baggage will be formed up at 6 a.m. in column of route, head at South-Hirono.

8. I shall be with the reserve after 5 a.m.

At daybreak on the 15th February Blue endeavoured to ford the river in two groups, south of Tono and near Asajuroku. It was, however, 6 a.m. before the first troops crossed; endeavours made at 4 a.m. met with no success as the conditions had altered and the river was too vigilantly guarded.

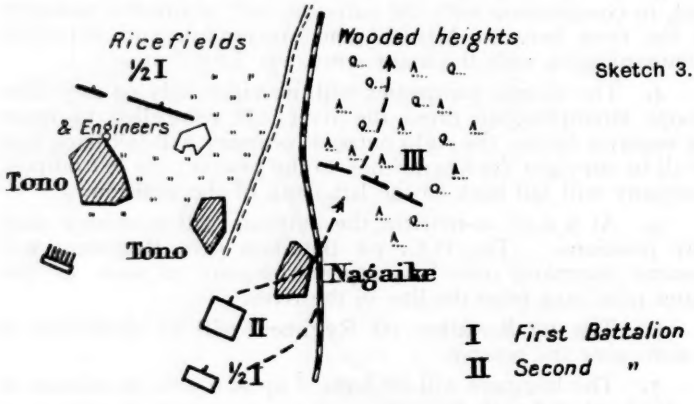
The Blue battery, which had come up to the river dyke south-east of Biwansho, was caught in a helpless situation by the fire of a company of Red infantry on the north-east bank, and was put out of action before our eyes. It was not possible for the battery to open fire rapidly on the narrow summit of the dyke with the teams in the intervals between the guns; the infantry escort remained under cover instead of replying to the enemy's fire. The group which was intended to carry out the secondary attack failed in its task, and exposed itself to unnecessary losses.

Meanwhile, however, the larger Blue group had forced a passage opposite Nashima in dashing style, wading through comparatively deep water and driving off the enemy's outposts

at that point. This success compelled the remainder of the Red outposts, who had hitherto held their ground, to fall back from the line of the river.

By 7 a.m. Blue had obtained possession of Nagaike and Tono as *points d'appui* for a further advance. The battery was brought into action on the river dyke, near the road, to the south of Tono; the northern edge of Tono and a temple north-east of that place were occupied by two companies of infantry and by the pioneers, who had crossed with the guns.

The intention of the Blue commander was to attack through the wood with his right wing; with this object he organized his troops as shown in the sketch.



Sketch 3.

Too much weight was, however, attributed by Blue to the difficulties of crossing the somewhat swampy rice fields between Tono and Terada. As a result the frontal attack was not sufficiently pressed home, while a wide outflanking manœuvre through woods and mountains to the eastward was undertaken by a force of ten companies. This manœuvre did not long remain unperceived by Red, who left two companies and two machine-guns in the eastern portion of his entrenched position and employed the whole of the remainder (ten companies of infantry and one of pioneers) in a vigorous offensive west of the railway, the machine-guns advancing along the railway embankment itself.

Two or three Blue companies attempted a counter-attack out of the wood, but, taken as a whole, the Blue force had obviously got out of control in the wood, while, on the other hand, the Red attack was seen to be so well combined, and to be making such good progress across the rice fields and railway track that its success appeared beyond doubt both to umpires and spectators.

I myself accompanied this attack on foot through the rice fields; at one moment we marched comfortably along dykes or over frozen places, at the next moment we sank waist deep; the dash and endurance displayed by the troops in this advance was beyond all praise.[1]

At the close of the manœuvres the troops were still fresh though they had not had their clothes off for four days. Not a single man had fallen out from the 19th Infantry Regiment, and only a very small number from the other units.

Operations had ceased at 9 a.m. The conference, which was long and exhaustive, was held on the dyke of Terada, in the Red position, at a point where a good view was obtainable; it was concluded by 11 a.m.

The 19th Infantry Regiment returned by rail to Tsuruga, arriving at 11.30 p.m.; the remaining units returned to their stations by march route. The troops from Fushimi had to march ten miles; the 9th Regiment from Otsu, 14 miles; the 53rd Regiment from Nara, 12 miles.

THE DIRECTOR'S CRITICISMS.

A few of the most important points in the Director's criticism are given below:—

As regards the first day's operations the Director criticized (a) the employment of the mounted troops as "Independent Cavalry," a rôle for which they were numerically far too weak; (b) the dispersion of the troops, on both sides, during the advance, and (c) the notion apparently entertained by the artillery that they should only come into action when definite targets were visible.

As regards the events of the 13th February he spoke somewhat as follows:—

"The retirement of Blue on this day was well executed, but detachments should have been left in front of the position, for security; some such detachments were left, it is true, but they withdrew quickly on to the position itself.

"If your intention at the moment is, not to strike a decisive blow, but to fight for time in which to strengthen your position, you must leave a screen of small detachments out in front, towards the enemy; these detachments must establish themselves at suitable points and keep off, or at any rate impede the enemy's reconnoitring parties. There is, of course, one drawback to the use of these detachments; they may become advanced positions; but in mountain country like this that is a matter of no importance.

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[1] For Director's criticisms on this day's operations see page 60.—Ed

"The Red side did not pursue with sufficient energy; they should have used their whole force, instead of employing isolated detachments. If Red had pressed the retirement vigorously Blue might have had great difficulty in reaching his position in the hills.

"In defensive positions in mountain country the question of fire at close ranges must be given the first place; fire at long ranges is of far less importance, because the enemy will nearly always be able to get out of it in a short time."

The preparations made, by Red, during the night, for the attack on the morning of the 14th were completely approved by the Director, who rightly attributed the successful execution of these movements—in spite of all the difficulties of the terrain—to the thoroughness of the training which the troops had received.

On the other hand, some fault was found with the handling, on the same day, of the Blue reserve, on the ground that it was not used *as a whole* for a counter-attack, but was employed to reinforce the front at various points.

The further steps taken by both sides on the 14th (*i.e.*, the retirement of Red across the Kizu, and the pursuit by Blue as far as that river) were approved by the Director. His remarks on the last day's operations are sufficiently interesting to justify me in giving the principal points verbatim.

"On the afternoon of the 14th the Red commander found himself compelled by the general situation and by the nature of the ground near Terada to act on the defensive. But, although the position was strong for defence and the tactical situation might have been thought to prescribe a purely passive attitude, the possibility of an active defence was by no means excluded. Our New Japanese Infantry Training inculcates the importance of being always on the watch for opportunities of taking the offensive, or of delivering a counter-attack, even during the most passive phases of a defensive action.

"In this case such an opportunity was afforded by the woods east of the road; it was therefore a better plan to fix bayonets for wood fighting than to construct any number of trenches and wire entanglements. In wood fighting, as in night operations, events move rapidly; after a short or vigorous fire-fight the troops must charge with cold steel; similarly provision must be made for launching a counter-attack.

"The Blue attack on the last day was a failure. If you throw troops into a wood they are soon swallowed up in it and control is lost; the Blue commander only kept two companies at his own disposal, the whole of the remainder had been thrown into the wood.

"If the intention was to attack through the wood the enemy should have been engaged by at least one battalion on the

front, Nagaike—Tono. I imagine that the reason for the plan of attack adopted was the belief that the rice fields were impassable; but infantry must be able to get over any kind of ground; certainly no ground which is capable of being traversed at all can be considered as affording protection merely by the difficulties which it presents."

In conclusion, the Director was able to testify with justifiable pride "That both officers and men had maintained their zeal, undaunted by the difficulties they had encountered, and had spared no exertions to render the manœuvres a success."

THE AUTHOR'S OBSERVATIONS ON JAPANESE TACTICS.

The object, which was systematically pursued in these winter manœuvres, had been to employ the troops under the most varied conditions and at all hours of the day and night.

The Japanese views on night operations, which are based on their experiences in the war, are, in the main, approved in our (German) army, and form the basis of the British instructions for night operations, and also of French military instructions on the subject. The Japanese instructions lay repeated stress on the importance of adapting all measures to the circumstances of the case; the dispositions should be such as to compel the enemy to cross the skyline "and show himself upright"; on the other hand, their own troops must stand up as seldom as possible.

Troops should keep a little way off roads unless the latter are required for purposes of movement; light backgrounds are to be avoided.

By systematic training of the men's hearing powers, frequent night operations, and inspection of individual units by night, the troops acquire a capacity for scouting in a noiseless, catlike manner, which makes the work of Japanese infantry patrols as interesting to watch as the movements of a fox approaching its prey. Instinct and technical training work hand in hand. On one occasion an attack, which was delivered at daybreak over difficult ground by six companies, advanced so swiftly and silently that some reserves, which were stationed only 200 yards away, were unable to come up in time to assist in the defence.

The most important lesson which I mastered during these winter exercises—a lesson of which I had learned something at the autumn manœuvres, and even before them—was in connection with that most important question of tactics—extensions under fire.

The Japanese demonstrated with the blood of many of their race that their divisions were capable of occupying areas and extents of front in battle to which their European opponents

would not venture to assign formations of less than an army corps; they have, therefore, come to assume both in the education of their officers and in the training of their troops that they can safely exceed, by a considerable margin, the extensions which are regarded as normal by their European instructors. *We* (Germans) may think they are wrong, but we must nevertheless assume that we shall be opposed on a front of 1,550 yards of entrenched position by only four companies, four machine-guns, and six guns employed in dispersed sections; or, on a front of 3,850 to 4,400 yards on the flank of an army, by only one division, which would nevertheless offer a very serious resistance. We ought, therefore, especially in view of the great expenditure of ammunition entailed by the increased range of modern firearms, to consider the matter impartially, and revise our preconceived opinions; or else we shall have to admit that a foreign army is superior in *moral* and fighting value to our own. There is no middle course if we propose to continue our policy of giving the doctrine of the enveloping attack the foremost place in the training of our officers and men, and if we do not decide to adopt the doctrine of "penetration" as better suited to our dense manœuvre and battle formations. The envelopment of these thin widely extended fronts, occupied by troops of a fighting value equal to our own, would, as a rule, be impossible in practice.

The Japanese troops derive great help in carrying out this doctrine of wide extensions, not only from their *moral* and spirit of self-sacrifice, but also from their skill in making use of the ground and overcoming natural obstacles, and from their excellent training in close reconnaissance, as well as from their rapidity of movement, which greatly increases the value of the reserves. To these must be added their perfect mastery of the use of entrenching tools both in attack and defence,[1] and the marvellous skill displayed, even by N.C.O.'s and men acting on their own initiative, in the application of field fortification.

There is also something of an artist's touch in the eye for ground, which enables the leaders to get the best value out of the use of field entrenchments, and in their capacity for passing, with lightning rapidity—undeterred by any consideration of the labour which has been expended—from an apparently passive and apathetic defensive to an offensive of the most vigorous and active character. In this they are greatly assisted by the capacity of their infantry battalions, regiments, and brigades for covering distances of as much as 4,400 yards at a run.

No labour expended on field works is considered as excessive, even if they are only likely to be required for a short time,

[1] In this connection it must not be forgotten that the Japanese have a liberal allowance of pioneers; each division has a pioneer battalion of three companies.

or even when the men working on them are aware that they are merely intended to mislead the enemy.

In spite of some mistakes, such as must always occur, it could be seen that the science of field engineering was thoroughly mastered, understood and intelligently applied by all ranks down to the individual soldier. Indeed it was observable that, as regards skill, theoretical knowledge, and general method of setting to work, the individual Japanese soldier was better trained in field fortification than our own; the men were allowed considerable independence in the execution of details and in improvising makeshifts.

The following are a few of the characteristic points which came to my notice during the manœuvres:—

(*a*) Defensive works visible from a great distance are, as a rule, assumed by the attackers to be dummy trenches, and no fire is directed against them, in the first instance, until it becomes evident, during the attack, that they are occupied. (All genuine works are tested beforehand, whenever possible, by the side which constructs them, to see if they blend well with their backgrounds, so that the real trenches are seldom visible from a distance).

(*b*) It is considered very unlikely that an attack at dawn will find the defenders in the same position as they were in when reconnoitred on the previous evening. By day, works with a wide field of fire are considered the best; by night, preference is given to those which compel the enemy to cross a skyline or to show himself against a light background.

(*c*) No one shrinks from the labour of constructing two or three lines of defence so as to allow for alternative positions in special circumstances (*e.g.*, darkness, thick weather, etc.).

(*d*) Two or three hours, even in complete darkness, is considered long enough to make ground, which affords ordinary facilities to the advance of an attack, practically impassable to the enemy; and this must be effected without letting the enemy know that there is any reason to modify the favourable reports received from his reconnoitring parties on the previous evening.

(*e*) As regards entrenchments, whether in attack or defence, *one line* of resistance is preferred; this line must, however, have salients and re-entrants, and contain gaps which are swept by fire from other points; it must present to the enemy's reconnoitring parties an inaccessible zone of greater or less width, in which the defenders' fire prohibits any closer view.

Bodies of troops on the march are, as a rule, masked, at a distance of 550 yards, on either flank, by a screen of infantry patrols; these patrols have to cover a great deal of ground.

(*f*) When the enemy has made all preparations for a formal attack, and can be seen at nightfall entrenching and digging himself in, one should suspect a surprise attack will be

delivered from a quite unexpected direction, most probably in some quarter—if such exists—where the difficulties of the terrain offer a deceptive guarantee of protection.

I have seen the Japanese infantry at work for a long time, but I have never yet seen the ground which they would fail to cross in the long run. The only reluctance they display—as a burnt child dreads the fire—is towards crossing open ground bare of cover. In such cases they prefer to go greater distances through marshes or forests.

(*g*) It is a mistake to suppose that entrenching imposes more labour on the troops, in the long run, than the attempt to dispense with it.

When the sentries, picquets, and detached posts have been made secure behind entrenchments and obstacles, it is possible to practise the most extreme economy of force among the troops in rear. The latter, as well as the staffs, in their well-concealed bivouacs, eat, bathe, rest, or carry on their work in complete tranquillity; communication by telephone, flag or lamp, is established with neighbouring bodies of troops and with headquarters, and supplies of the simplest, though most serviceable kind are issued in ample quantities. Troops were limited to the active service scale of luxuries, but these were made full use of; practically no restrictions were placed on the utilization of the resources of the theatre of war.

Though these manœuvres took place in winter the greater part of the troops bivouacked on three successive days; I think I now understand the attitude of the Japanese towards bivouacking. They regard it, in all its various graduations from bivouacking proper to close billeting, as a natural incident of field warfare at any time of the year. They do not like it—quite the reverse—but they treat it as an unavoidable necessity; they make themselves quite at home in their bivouacs; they wash, unpack their kits, complete deficiencies from the baggage, which comes up just as it would in war, rest themselves thoroughly, and renew their strength.

In our (German) army—to be quite candid—bivouacking is regarded rather as a pause between two stages of the manœuvres, and not as an opportunity for a thorough rest; this is not looked for till the next rest-day in billets, upon which we are, in consequence, unduly dependent.

The most brilliant achievement during these exercises was the fording of the Kizu River; this river seemed to me to resemble the Lech in strength and velocity of current, while the volume of water on the day in question was like that of the Alz; the water was covered with ice, except in places where the strength of the current prevented it from freezing.

The stream was piled up to such an extent by the passage of the artillery that the waves broke over the guns; the gun

leaders were harnessed in a simple and practical manner, and the driving was good and careful all the way across. At some places the infantry had to wade breast deep through the foaming current; at these places the men linked arms, chiefly as a precaution against the giddiness to which some individuals are liable at the sight of swiftly flowing water.

The dismounted company commanders of the infantry had to wade, as did also the medical officers, pay officers, etc. Some mounted officers also waded through out of zeal. Fighting went on after the crossing was over, until the tactical situation allowed an opportunity for the men to dry themselves and change their underclothing, after which they went on outpost duty or into bivouac.

The employment of dismounted company commanders— a plan adopted by Napoleon—appeared to me, in the light of these manœuvres, as a severe but eminently sound arrangement; it serves to bring out the hardiest and fittest infantry officers, and in cases (such as in pioneer battalions in this country) where there are six or eight horses available on the battalion staff to mount the officers if necessary, the system appears to be open to no objections.

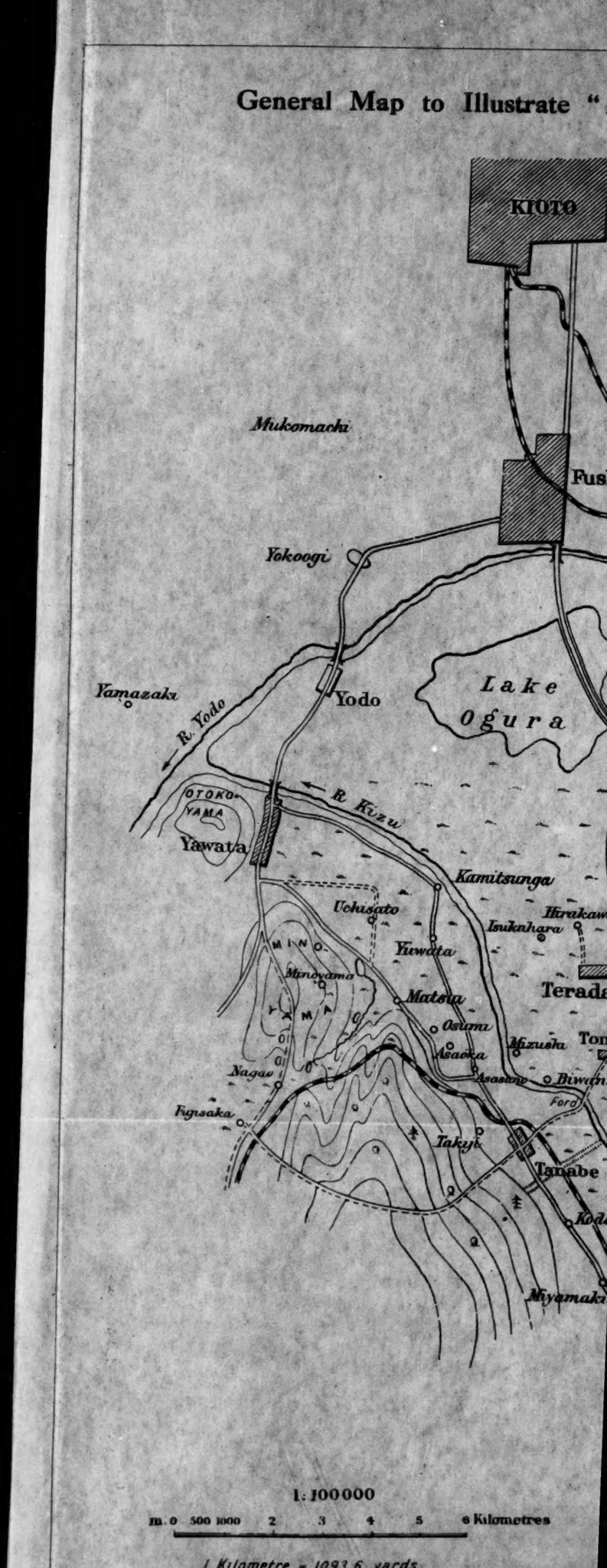
Very noticeable at these manœuvres was the active support given by the administrative authorities, as was also the interest displayed by all the schools. As early as the first issue of orders at Tamamizu we met the Head of the Administration (*Regierungs präsident*) of Kyoto, a very distinguished old gentleman speaking French and German fluently, who did not think it at all beneath his dignity to go on in advance with his councillors and officials and see that everything had been arranged for the troops. The Head of the District (*Kreischef*) and the official in charge of bridge construction (*Flussbauchef*) were present from 3.30 a.m., on a bitterly cold morning, on the day we crossed the Kizu.

The schools followed the troops in the same way as is done at the autumn manœuvres, that is to say, each class devoted a complete day to following some military movement which was going on within reach. Everything that was happening was carefully and patiently explained to them; they were shown the field entrenchments, the bivouacs, etc.; they in their turn displayed the liveliest interest, which will not fail to bear fruit later on. The pupils of the Secondary School (*Mittelschule*) at Tono-Nagaike were also given leave to follow the exercises, and later to prepare a good reception for the Directing and Divisional Staffs at their billets.

I feel that I cannot conclude this report without some word of thanks to those through whose courtesy I was enabled to get so much pleasure and advantage from these manœuvres, and especially to the gallant commander of the division, whose kindness was unremitting, and whose uppermost thought was

that the guest of his army should see everything that was possible as far as was compatible with the interests of his country. The Director also showed me the greatest kindness, in spite of the numerous demands on his attention, and his assistants were equally attentive. All orders and instructions were conveyed to me as early as possible, and any information which I asked for was promptly given. The civilians, both officials and people, also displayed a cordiality towards the foreign guest which far surpassed what is customary in our own country on similar occasions.

Taken as a whole, these winter exercises, in spite of their modest scope, were the most instructive of any that I witnessed during my attachment in Japan.


General Map to Illustrate "
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A Japanese Winter Exercise."

TRAINING AND ACTION NECESSARY TO FURTHER CO-OPERATION BETWEEN ARTILLERY AND INFANTRY.

By MAJOR C. E. D. BUDWORTH, M.V.O.,
Royal Horse Artillery.

On Wednesday, 27th November, 1912.

LIEUT.-GENERAL SIR J. M. GRIERSON, K.C.B., C.V.O., C.M.G., in the Chair.

I. MUTUAL KNOWLEDGE OF EACH OTHER'S REQUIREMENTS.

ON the truth of the statement that infantry and artillery when acting in combination are more powerful than when acting independently it is scarcely necessary to insist. The acceptance of this statement at once gives us the key to the two great guiding principles of co-operation.

Combined action demands a central guiding brain—a single commander. It follows that this commander and his staff must possess a knowledge of the possibilities and limitations of both arms.

Command in the field must perforce be delegated, and consequently subordinate commanders and their staffs must also possess this knowledge. Since we have to deal with forces both large and small, junior officers may find themselves called upon to issue orders for the handling of a mixed force, and therefore they too require this knowledge.

Nor is it only a position of command which makes it requisite.

In the field there is little time for discussion and explanation.

This knowledge is essential in order that all ranks may carry out their orders with intelligence, and may exercise due initiative.

The first guiding principle of co-operation is, therefore, that all arms should be trained in a mutual knowledge of each other's requirements.

II. CO-OPERATION MUST BE PRACTISED IN TIME OF PEACE.

The required knowledge is not to be derived from books alone, and even if it could be so derived, it would not ensure the smooth working together of the arms in war. A more practical experience is requisite. The teachings of war prove co-opera-

tion to be a product of peace training, and not one called into existence by a declaration of hostilities. We therefore obtain our second great guiding principle of co-operation. In order to ensure co-operation in war, it is essential to practise it in peace.

III. WHAT IS BEING DONE AS REGARDS I. AND II.

Is enough being done with regard to these two guiding principles?

To answer "No," is easy. But to-day I would rather insist on what is being done; satisfied that, although a few years hence our present standard may be regarded as defective, perfection in these matters must be the outcome of years of systematic and progressive peace training, and cannot be called into existence by a stroke of the pen.

Every effort is now made to render our training systematic. These efforts meet with a measure of success, severely hampered as they are by difficulties inherent in our system of recruiting and in supplying drafts for service abroad.

There are regimental, brigade, divisional and staff exercises and conferences; individual, regimental, brigade, and divisional training, all culminating in the annual Grand Manœuvres.

The policy of attaching officers to arms, other than their own, for instructional purposes may still be in its youth, but it is carried out to a much greater extent than heretofore.

Generally speaking, the broader the training officers receive, the better. The same holds good of the training of artillery units.

That artillery technical training can be carried too far, at the expense of a broad training, is a lesson of war. Those who follow our *Instructions for Artillery Practice* know that in recent years two important changes in policy have been introduced.

Firstly, the Divisional General no longer visits a practice camp as a mere onlooker, but to supervise and guide the training of his artillery. It is possible that in peace time the training of artillery could be carried out by artillery officers only, without any conspicuous ill-effects. Officers of the other arms will have much to say, however, to the handling of artillery in time of war. The more experience they gain in time of peace, the better for themselves and the better for us.

Secondly, our authorities have recently seen fit to inaugurate certain changes in our system of practice, which, whilst safeguarding a thorough instruction in elementary practice, legislate for instruction in the tactical application of fire.

It has long been recognized that the first great lesson which artillery has to learn is to be able to hit, and that,

unless it is able to hit, it is useless. It is now realized that not only must artillery be able to hit, but that it must be capable of applying that power of hitting to the best advantage of the other arms, and that this requires legislating for at our practice camps as well as elsewhere. Time must elapse before we can hope to derive full value from these instructions, the ultimate outcome of which will be an improved knowledge of the principles and practical steps requisite for effective co-operation in the field.

Officers of the other arms attend our practice camps more regularly than formerly, and no doubt in the course of time we shall see arrangements for their instruction perfected, and more use made of their services when present. The presence of infantry and cavalry officers on the practice ground, and a free interchange of ideas, must serve to intensify the feeling of co-operation, and to inculcate a general knowledge of each other's requirements.

IV. IT IS NECESSARY TO FOSTER A BOLD ARTILLERY FIGHTING POLICY.

The history of the wars of the last 50 years proves that the lack of a bold artillery fighting policy is fatal to co-operation. It proves, moreover, that such a policy is not to be called into existence by the roar of cannon and rattle of firearms, but must be fostered in time of peace.

Co-operation cannot be looked for, where guns are constantly brought on to the battlefield too late to be of material assistance; where guns are constantly held in reserve against eventualities, which may never occur; and where guns are never pushed forward in close support of infantry.

Artillery with its vast train of ammunition wagons, blocking the roads, and defenceless while on the move, must be a constant source of anxiety to a commander and his staff. The temptation to relegate it further to the rear is very great.

Great also on the battlefield is the temptation to hold it back to meet eventualities.

Our *Artillery Instructions,* in dealing with the principle of "Economy of Force," expressly warn us that this principle must always be subordinate to the necessity of employing sufficient force to attain the object in view.

Great battles, cannot, we know, be won without incurring losses. Nor can artillery, however high its technique, hope to carry out its task of co-operating efficiently with its infantry without running risks.

With the general policy of concealment as advocated in our *Field Artillery Training* I agree, except that personally I prefer the terms "partially concealed" and "concealed posi-

tions" to "semi-covered" and "covered positions." But we must carefully guard ourselves against gauging a position by the immunity from loss that it confers, rather than by the extent to which it lends itself to the required task. Otherwise we may gradually come to think that a position in which losses are incurred is—*de facto*—a bad position.

Nor with regard to the close support of infantry, need we spend too much time discussing whether this support cannot be as well rendered from a distance, as from close at hand. It may or may not be; but neither you nor I can definitely say without a knowledge of the particular tactical and topographical circumstances.

We can afford to be bold in our peace training, knowing well that shot and shell quickly impose the necessary caution, while on the other hand, if we are over-cautious in peace the necessary disregard of risks is not likely to exist in war.

I trust that we artillerymen are duly imbued with the idea that no hill is too high to climb and no risk too great to be incurred in the support of our infantry. In any case, one could not afford to disregard the subject here, as war has too often proved how mighty is the spirit of self-sacrifice as a lever to co-operation.

V. SUPERIOR EQUIPMENT OF ITSELF CONFERS GREAT ADVANTAGES.

The experience of war proves that although an artillery, armed with a relatively inferior equipment may, thanks to its relatively superior training and spirit, co-operate more effectively with its infantry, than does the enemy's artillery, yet a superior equipment of itself confers great advantages.

In equipment, so far as I know, at the present day we can hold our own. It remains for us to weigh carefully what changes in equipment will be called into existence by the great developments which we see around us in motor traction, aeroplanes, electricity, etc.

VI. CO-OPERATION ON THE BATTLEFIELD.

Given a mutual knowledge of each other's requirements, artillery and infantry trained conjointly and not in water-tight compartments, given also the right spirit and good weapons, what steps can be taken to ensure, as far as possible, effective co-operation on the battlefield?

Our divisional artillery consists of guns, howitzers, and heavy artillery. In order to combine and utilize their fire to the best advantage throughout an action, and to guide it constantly towards the desired goal, we must of necessity have:

A clear initial Plan of Action and Control by Superior Authority.

If the control of the artillery is allowed in undue measure to devolve on subordinate commanders, the G.O.C. soon finds himself in the position of supervising the action of mixed forces of artillery and infantry rather than of commanding the two arms, artillery and infantry. He is thus deprived of the power of concentrating an overwhelming artillery fire upon the right place at the right time, a power which, ably applied, has so often proved the secret of success in battle.

In the many vicissitudes of an attack or a defence, where many troops are engaged, first one portion of the line may require support and then another. Nothing is easier than for the G.O.C. to direct his C.R.A. to carry out this support, provided he has batteries which have retained their mobility. If such guns are placed under the orders of subordinate commanders, they are likely to be drawn into the close support of infantry, and sacrifice their mobility, without reference to the general plan of action. With the loss of mobility guns cease to be available for general purposes. I conclude, therefore, that a G.O.C. will be cautious in allowing the command of his artillery to devolve on subordinate commanders, and that there is a grave risk that artillery, which has once been allowed to quit the fold, will not again be available for general purposes.

That guns should at times be placed under the command of subordinate commanders is unquestionable. The extent to which central control can be effectively exercised is largely dependent on topographical conditions rapidly descending in the scale as difficulties connected with field of view and communication increase.

The executive direction of the fire demands the undivided attention of one officer, and this naturally falls to the senior artillery officer.

It is necessary that the Artillery Commander should be in the confidence of the General Officer Commanding.

This should be, and I believe is, ensured both by our organization and training.

Preliminary Reconnaissance on the part of the Artillery Commander is essential.

It is not only a question of being able to locate as far as possible the enemy's dispositions, but it is also a question of drawing up a well thought out plan, in which field guns, howitzers, and heavy artillery may best be enabled to play their respective *rôles*. Observation over the field of

fire may be systematically organized; communication may be established with a view to the rapid collection and dissemination of information, and, in short, everything may be done towards a scientific combination of fire, which may be rapidly directed in accordance with the needs of the moment.

The initial positions occupied by the artillery often form the frame-work of the battle.

If these positions are occupied without reference to the general plan of action, faulty dispositions will result which will later be difficult to rectify.

The reconnaissance must be continued during action, and supplemented by that of subordinate artillery commanders.

The Artillery Commander must remain in close touch with the General Officer Commanding throughout the Action and in sure and rapid Communication with his Subordinate Commanders.

This is necessary in order that he may retain a grasp over the situation as a whole, promptly direct the co-operation of the artillery placed at his disposal according to the orders of the G.O.C. or vicissitudes of the fight, and assist his subordinate commanders by furnishing them with information, which they might otherwise find it difficult to obtain.

As the fight progresses, new batteries may have to be placed under the orders of subordinate commanders of the other arms, or possibly batteries already so allotted may have to be withdrawn for general purposes. Such matters present difficult problems, the solution of which is likely, at any rate, to be facilitated by the general principles above mentioned.

I take this opportunity of calling attention to the wisdom of two details of our artillery peace training:

Firstly:—The standard of training demanded from the personnel in communication work, a standard permitting not only the requirements of small artillery units to be satisfactorily performed in action, but rendering the personnel of general utility to the Service in war.

Secondly:—The energy devoted to the training of a large and efficient battery staff in the certain knowledge that the battery must be the nursery for the training of those N.C.O.'s and men, who will be required to perform skilled work on the staffs of higher artillery commanders, if not of battery commanders, in time of war.

Control by Subordinate Commanders.

Our *Field Artillery Training* tells us that "Units of the two arms associated for a distinct tactical operation should, as a rule, be under one commander."

To further co-operation the same general principles enumerated above hold good for the guidance of the artillery by subordinate commanders, but their execution is somewhat modified by circumstances.

The Subordinate Artillery Commander must be thoroughly conversant with the Plan of Action.

In order to ensure this he should personally, if possible, get into touch with the commander of the troops concerned. This commander is responsible for the plan of action, which includes that of the artillery placed under his orders.

It is most important that the artillery and infantry should be in possession of identical orders.

It would seldom suffice merely to order artillery to support an attack.

To what extent reconnaissance and consultation between commander and C.R.A. should be carried, it is difficult to say, and in any case it is inadvisable to attempt to lay it down definitely.

Have these officers been accustomed to working together? To what extent is the direction of the infantry advance determined by superior authority, or by the positions of neighbouring troops? Of what importance is the element of time? What is the personal equation of the commander concerned?

I think that the most which can be safely said is that the C.R.A. should accompany the commander, if reconnaissance takes place, and should be afforded an opportunity of giving counsel on the requisite action of the artillery.

Once the plan of action is settled, it behoves the artillery commander to be constantly looking ahead and doing all in his power to prepare for eventualities. Some artillery officers on these occasions make a free use of their officers and patrols on definite reconnaissance work. I believe this to be an essentially sound policy. Energy and initiative in this respect may be rewarded by success, much greater than can be foreseen at the time.

Possibly it may be difficult to find a satisfactory gun position, or what is even more important, a good observing station. Special steps may be required to obtain them, necessitating, perhaps, loss of life, in the conviction that losses thus incurred may ultimately result in economy of life.

Communication must be maintained between the Subordinate Commander and his C.R.A.

This is necessary, both because the plan of action is likely to undergo modification and because of the difficulties experi-

enced by artillery in the conditions of modern war directing their fire to the best advantage of the other arms.

It is distinctly preferable that the C.R.A. should himself remain in immediate touch with his commander. One cannot afford, however, to be dogmatical on this subject. The position of the commander is not dependent on that of the artillery, and may possibly require to be changed somewhat frequently. Frequent changes of position are out of the question for the C.R.A., due regard being paid to the exercise of his command. When personal touch can for any reason no longer be maintained, an artillery officer should still accompany the commander. This artillery officer should be accompanied by such N.C.O.'s and men as are required to maintain the communication between the commander and C.R.A. This artillery officer, aided by his accompanying N.C.O.'s and men would report on the movements of friendly and hostile troops, and on all other matters tending to render the artillery fire most effective.

Although the artillery thus assists itself, it looks to the infantry also to furnish information. Such information, emanating perhaps from the firing line, would presumably be sent to the commander, be sifted by his staff, and forwarded to the C.R.A. through the above-mentioned channel.

The Subordinate Artillery Commander should be able to communicate rapidly with the fire units under his Command and with the Senior Artillery Commander.

This principle requires no further elaboration.

Artillery acting in support of Infantry when the control has not devolved upon the Subordinate Commander.

Hitherto I have considered the artillery commander, who has been allotted a task necessitating co-operation with a certain force of infantry, as placed under the orders of the commander of that infantry.

Our *Artillery Instructions* distinctly lay it down that whether this is the case or not, the artillery commander must open communication with the infantry commander, reporting to him in person, if possible, in order to obtain full information as to the character of the operation that he is to support, and the instructions as to the proposed method of its execution.

It is obvious that the commander of—let us say—an artillery brigade may be allotted a double task, such as watching a zone and supporting an infantry attack. His batteries may be on a flank of the zone of the infantry advance. It would not be difficult to imagine other problems more interesting or more complicated. It would be a hopeless task to attempt to deal with them in detail.

I am not prepared to say that observance of the above principles will ensure the solution of such problems, but it will always tend to facilitate it.

There is one grave danger which has to be carefully guarded against, namely, confusion as to whose orders the artillery is working under. Even officers of my limited experience know how liable this is to occur, and how baneful are its results. I have seen it occur in war, and I have seen it occur in peace.

If guns are allotted to a certain task, it is essential that explicit instructions be issued on this point. Failing this, both the officer commanding the attacking troops and the officer commanding the supporting guns are liable to be placed in a very awkward position.

Similar care is essential, when it is required, for any reason, to withdraw the support of batteries placed under the orders of subordinate commanders, or allotted to some given task.

Whether control remain in the hands of superior or subordinate authority, in order, so far as possible, to ensure co-operation, we therefore require:—

1. Knowledge of the plan of action.

2. Communication maintained between the commander and his C.R.A.

3. Communication maintained between C.R.A. and his command.

I can claim no novelty for these principles. They are all legislated for in our instructions. If they appear unduly simple to achieve so great a result, I would ask you to watch the difficulties in endeavouring to co-operate incurred by artillery and infantry when they had but little previous combined training. Ask yourselves—what are the immediate causes preventing co-operation? What practical steps could be suggested in order to overcome these difficulties? Then finally consider what care in organization, equipment and methods of training are required to achieve perfection in these details.

VII. ARTILLERY DIFFICULTIES IN CO-OPERATION IN MODERN WAR.

I alluded to the difficulties experienced by artillery under the conditions of modern war in directing its fire to the best advantage of the other arms.

I propose now to refer briefly to this subject. These difficulties may be summarized as:—difficulties in—locating the enemy's position—distinguishing between friend and foe—control and direction of fire—ammunition supply—movement on the battlefield.

Unless the position of the enemy can be accurately located, and unless he is forced, in some measure, to expose himself, the results of artillery fire are likely to be very disappointing.[1]

Reconnaissance by telescope or field glass may fail to disclose the position. The real position may be covered by advanced posts, which the mounted troops have been unable to drive in. The enemy may decline in any way to divulge his strength or intentions until compelled to do so.

Efficient cover against artillery fire in the field is comparatively easy to obtain.

It does not much matter what the particular form of cover is. If oblique fire can be brought to bear—good. But, if not, field guns cannot destroy it, and the defenders may lie quite secure until such time as they are forced to expose themselves. Once they are exposed, your field guns can perform their task effectively.

It is true that howitzers may prove effective against troops behind cover, but it is even more important in their case than in that of field guns that the target should be accurately located.

It is to the action of the infantry that we artillerymen look to force the enemy into activity. We are thereby enabled to locate the hostile position, and are at the same time provided with a vulnerable target. It is for us, by covering fire, to protect the infantry from undue losses, whilst thus forcing the enemy into activity.

Hence, as we all know, the infantry advance and artillery action, or duel, to be successful, must form but one, and not separate, phases of the battle.

As the infantry, making every use of cover, advance, leaving their guns further and further behind, it becomes more and more difficult for the artilleryman to distinguish with certainty the movements of friendly from those of hostile troops. Mistakes one way or the other may prove equally disastrous. We are obliged to employ special men to assist us in this, and it is doubtful if this alone suffices.

So long as the troops opposing you are exposed to the accurate fire of your supporting guns, your losses are likely to be small. Remove or cease that artillery support and your losses become heavy. Artillery support is, therefore, well worth maintaining as long as possible.

So far as the risks you incur from your own guns are concerned, it is of little moment whether these guns are behind cover or in the open. It is of great moment, however, that the officer directing the artillery fire should be able to distinguish between friend and foe, should have a clear view of the target, and should retain the control of the fire in the hollow of his hand.

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[1] See account of attack on Chatalja Lines on page 134.—Ed.

Hence, as the fight progresses, artillery must close in under the covering fire of other guns. If this cannot be done by day, artillery must close in by night.

The fact that you are closing in pre-supposes, in my opinion, that your guns are gaining an ascendancy over those of the enemy. If this is not so, then in all probability your advance will, at any rate, be temporarily checked. This has to be borne in mind in considering concerted action on the part of troops thrown for any reason on the defensive.

Here, I think, in the later stages for artillery support, you have to rely to a much greater extent on initial dispositions.

To rely solely on the occupation of direct fire positions at this stage of the action is certainly hazardous, though as our *Field Artillery Training* enjoins, artillery must, should circumstances demand it, undertake the task without hesitation.

In the early stages of an action, artillery fire is not likely to prove capable of preventing guns from occupying exposed positions, should the attempt be made. To extricate guns thus exposed, once the enemy has been enabled to bring accurate fire to bear on them, is likely to prove a matter of much greater difficulty. In other words, mobility is liable to be sacrificed. For similar reasons the replenishment of ammunition may be rendered very difficult.

Exposed guns forming as they do a comparatively easy target for hostile artillery fire, may find themselves engaged in an unequal contest, unable to carry out their task, and unable to move in order to re-commence it again under more favourable circumstances.

On the other hand, the occupation of covered positions tends to complicate that rapid control and direction of fire which may be essential to the support of infantry.

It is constantly a question, therefore, of how far we can afford to obtain immunity from the above-mentioned disadvantages at the expense of the efficacy of our own ammunition. The war experiences and teachings of Russians and Japanese on this subject are, I believe, supposed to be somewhat antagonistic.

I think that the differences are more apparent than real. Although the Japanese favour direct fire positions, they are careful, in practice, to lay great stress on concealment in action. As our shields afford us reasonable cover, the ideal position would appear to be a direct fire position, easy of access and one in which the advantages of concealment are obtained by utilizing existing topographical conditions or artificial means.

Such positions are not easy to find on our practice grounds, and even if they were, the element of time would often debar their use. Their value in war, however, especially when fighting in enclosed country, should not be lost sight of.

As I have already intimated, I think that it is concealment and not cover which we have principally to aim at, though under certain circumstances, it comes to very much the same thing.

VIII. CONCLUSION.

I have attempted to outline certain guiding principles to further co-operation between artillery and infantry.

So far as my limited knowledge goes there is no one of these principles in which, if we have not yet arrived at perfection, we are not, at any rate, doing our best to attain it.

DISCUSSION.

Major-General J. L. Keir, C.B.: Sir James Grierson, ladies and gentlemen: What we are discussing this afternoon has been described as the most complex problem of contemporary tactics. I think the complexity mainly consists in the endless varieties of ground and in the manifold dispositions which are made by an enemy. If this subject be discussed generally, not very much progress will be made; I think the best way of dealing with it is to break it up into a number of smaller questions and take them in turn.

There is no doubt that it is much easier for the artillery to support a small body than a large one; that is to say, if you have two batteries and an infantry brigade it is very much easier for them to give close support than it is when you have a large body of artillery supporting an infantry division. For this reason, that when the two combatants are coming close together there is more danger of your own side being hit. It is quite easy to fire over men's heads when you are a long way off, but the closer your men get to the enemy the more danger there is of their being hit. This question of the artillery support is not being treated sufficiently as a branch of military art. I do not think we have given a fair chance to this effective support of the infantry. After all, it is only an enlargement of the firing support which is given by the infantry—covering fire—and on which so much stress is laid; with this difference, that instead of the bullet you have the shell. The modern shell, of course, is improved very much, but the only question is whether we are not treating it with too much deference at the present time. I should like to see a little more manœuvring in front of loaded guns than is carried out at the present time. I think more progress would be made.

If we come to practise this, might I suggest one or two things? One thing is that at present I do not think, when we are going to carry out an attack, that it is clear whether the officer commanding the infantry is in absolute charge, or whether the guns are merely going to support him. Until the officer actually commanding has complete authority to give orders to his guns I do not think we shall have effective support. It is done in the case of a rearguard. You do not question that the officer commanding a rearguard has the charge of his force absolutely at his disposal, and I think that should be done in the case of small groups.

Then again, I think it is useless to hope for any progress unless live ammunition is fired. Realism is wanted as much as possible. I also think the ground ought to be varied. It is no use practising over

the same ground. You should have a different lesson to teach each time. You must vary your ground in teaching. With regard to battles of the present day, of course the officer in supreme command places the troops in position, but it is quite evident that the fighting is done by the subordinate commanders. The general, so to speak, holds the sword in his hand, but the sharpness of it depends entirely on the training of the subordinate leaders. In this matter the close support of infantry by guns is an extra weapon placed in their hands. We are now dealing very successfully with infantry fire support, and I think we might go a little further and deal a little more practically with artillery fire support. We are all very much obliged to Major Budworth for his lecture, which leads us to suggest further practical remedies which I hope will be carried out.

Lieut.-Colonel J. G. Geddes, R.F.A.: I have studied this question closely for many years from different points of view. (1) As a battery and artillery brigade commander; (2) as an officer of the School of Gunnery; (3) as an umpire at various periods with the 1st, 2nd, 3rd, and 4th Divisions; (4) as an officer of a divisional staff. From my experience I am convinced that true co-operation between artillery and infantry depends on the personal equation of the officers of each arm. Unless a thorough *entente cordiale* exists between artillery and infantry officers (more especially the field officers), co-operation is seldom successful. To obtain this *entente cordiale,* or understanding, artillery and infantry must be quartered together at the same station.

INTIMATE ASSOCIATION OF INFANTRY AND ARTILLERY OFFICERS.

With regard to training, the officers, by hunting, shooting and playing games together acquire mutual friendship, which quickly extends to N.C.O.'s and men, and that is the first and perhaps the most important step in training. The second step is the association of officers of all ranks at regimental exercises and brigade tours and conferences. Thirdly, during certain periods of battalion training, sections and batteries of artillery should take part; the battery commander assisting the battalion commander in the preparation of the schemes. Finally, at infantry brigade training, the artillery should take part as desired by the infantry brigadier.

Artillery officers not with the guns should be utilized as umpires, and artillery field officers should take their turn with infantry field officers in command of mixed forces. At artillery practice camps the infantry officers should attend with the artillery brigade with which they associate. Training on the above system should be carried out prior to divisional training, and can be performed without interfering in any way with the technical artillery training of batteries and brigades. At all combined operations in which artillery and infantry take part, the Director should make it a point to deal with the action of the artillery as well as that of the infantry in his remarks. This is sometimes forgotten, and I may say that nothing kills the zeal of artillery more effectually than being ignored in the remarks made at conferences. When divisional training takes place it will be found that the close association and understanding which has been fostered between artillery and infantry, in the earlier stages of training, enables the divisional commander to devote the whole time at his disposal to the instruction of the division as a fighting unit.

With regard to action, the recent edition of *Field Artillery Training* lays down certain broad principles for the co-operation of artillery and

infantry. These principles are clear, and if carried out, are sufficient—but here again we find the personal equation of the officers concerned is all important. An artillery brigade commander, intimately and personally acquainted with an infantry brigadier and his staff, has seldom any difficulty in ascertaining the tactical situation as regards the requirements of the infantry he is ordered to support. He can do this at critical moments without intrusion where a stranger might easily fail. If he is not actually present at the infantry brigade headquarters, the officer left to represent him (probably a young officer) finds his task much easier owing to his personal acquaintance with the staff. Therefore, I am strongly of opinion that the personal equation of officers is of the greatest importance in co-operation between artillery and infantry.

DISTINGUISHING FRIEND FROM FOE.

Turning to the difficulty of distinguishing friend from foe, I think that can be minimized either by sending forward an artillery officer into some position in which he can see exactly where our own infantry have got to, or else by pushing the guns forward and not keeping them too far behind. Here, again, the intimate acquaintance between artillery officers and the infantry units is of very great value. Certain regiments one has no difficulty in recognizing; for instance, the Gordon Highlanders. Perhaps a scheme might be devised whereby some sort of badge could be carried by our infantry on their backs, which would be out of sight of the enemy. With regard to sending back information to the guns from the firing line, the information for the guns should come from the firing line to brigade headquarters, and then be transmitted to the guns. On certain occasions it may come back direct to the guns. On the last day of the army manœuvres this year, a counterstroke was about to be delivered. A battalion commander called up my guns direct and said, "My battalion and the battalion alongside are about to deliver a counterstroke." We received that information and were able to support that counterstroke. But there is a danger in allowing infantry units to communicate back to the guns from the firing line, namely, that the guns may be diverted from the main objective to take part in some local and unimportant affair.

Brigadier-General F. J. Davies, C.B.: I had no intention of taking part in this discussion, but as the Chairman has called upon me I may say that I agree with what the last speaker has just said about the danger of information coming to the guns direct from the firing line. In the particular instance which Lieut.-Colonel Geddes mentioned, the gunner used his own discretion, but he might not have done so. There is a very great danger that the gunners will get an urgent message to concentrate their fire on some unimportant area. When we are under heavy fire we always imagine that the particular part of the battle which we are fighting is the one on which the fate of the Empire depends. That is why I think it is certainly better that information to the guns as to what particular part of the attack they are to support should come from the responsible superior commander and not from some doubtless very gallant but subordinate commander in the infantry firing line.

Major H. Rowan-Robinson, R.A., said that co-operation had been discussed for the last 50 years, but he was not sure that they were any nearer the practical application of it. The real difficulty was to find some simple system of applying it. There was no doubt about the

importance of supporting the infantry up to the last moment of the attack; but, at present, according to *Field Artillery Training*, the guns must cease firing, depriving the infantry of their artillery support at the moment when they were going to deliver an assault. At present, out of 72 guns in a division, the assault could be supported by only 18 howitzers. The only way, so far as he could see, to utilize the remaining guns would be to introduce a separable charge. This would involve double range tables, but he did not think there was necessarily any difficulty about their use. It was only necessary to have two differently marked range drums to each gun. The separable charge itself would only entail some structural alteration in the limbers and wagons.

It was, in his opinion, of no great importance to turn the fire on to the reserves. It was the fire from the enemy's trenches which stopped the attackers' firing line, and the reserves were not very likely to choose the moment of assault to reinforce their firing line. They were far more likely to hold themselves ready in rear to deliver a counter-attack as soon as the assault had been delivered. Therefore the important thing was to shell the enemy's trenches and not his reserves.

Attachment to Other Arms.

It was certainly an admirable thing to establish an *entente cordiale* between the two arms, but that hardly went far enough. Artillery could not properly support infantry unless each artillery officer knew a good deal more than the average artillery officer did know about the practical handling of infantry. Officers were often attached to other arms, but, to his mind, it was perfectly useless to attach an officer to any other arm unless he was given the responsibility of leading the troops of that arm. Infantry officers might watch artillery practice and artillery officers might watch infantry carrying out an attack, but unless the infantry officer had charge of the guns or the artillery officer had charge of a company or even of a section, he would never learn what were the real difficulties of handling the troops, learn how to deal with the ground, and so on. It was, perhaps, impossible to attach every infantry officer to a battery and give him a command, but it was quite possible to attach most field artillery officers to infantry. It was more important that the artillery officer should learn the procedure in action and the methods of leading of infantry than *vice versa*, because it was the artillery who had to support the infantry and not the infantry who had to support the artillery. The artilleryman was to a great extent the servant of the infantryman, and it was his business to learn the job of the infantryman.

Brigadier-General N. D. Findlay, C.B.: I should like to draw attention to the necessity of timing the advance of a body of infantry to the attack so that it shall not commence until the artillery detailed to cover its movement are ready to open fire. It is not always realized how long batteries take to come into action after the general plan of attack has been decided upon. They may have to advance a considerable distance over broken ground, and in any case the reconnoitring and selection of positions from which they can carry out their missions requires time. I think it should be clearly understood that, in order to avoid the risk of any failure in the co-operation of the guns, and the possibility of the infantry finding itself under hostile fire unassisted by its own artillery, the advance should not be ordered, until the artillery commander reports that he is ready to support it.

POSITION OF THE INFANTRY COMMANDER.

The next point to which I would refer is the actual position selected for himself by an officer commanding a force of infantry which is supported by artillery. In order to get the fullest possible benefit from the artillery it is desirable that he should have the artillery commander with him. But the latter officer *must* be where he can see what is going on, and I therefore submit that the commander of the infantry should select his own position with due regard to the requirements of the artillery as well as to those of his own arm. I know that an infantry brigadier often likes to be with his reserve, or at some place where he can get his messages from his divisional headquarters or from the front, but the maintaining of close personal communication with the officer commanding the supporting artillery is so important, that it is worth trying to find a place which will suit them both. I would also urge that the infantry commander should change his position as seldom as possible. Every move means for an artillery brigade commander dislocation of communications, and a critical period in the fight may occur just when a move is taking place.

There is one difficulty we have to contend with in connection with the support of infantry at the commencement of an offensive action, namely, that the enemy will almost certainly have his guns completely hidden behind cover. He will open fire upon our infantry and probably we shall not be able to locate his guns. At present we have no means of locating them, and we are told in the *Training Manual* not to expend vast quantities of ammunition upon an objective which we do not see. What is very much wanted, therefore, is more practice in locating targets in concealed positions, and bringing fire to bear on them by means of observation from aircraft.

Such observation, I suggest, ought to be regularly carried out at all our practice camps. Last year some experiments of this nature took place, aeroplanes being employed, but it seemed to me everything was so slow with the aeroplane. It had to circle over a battery, then go round and come back again. I think what is wanted is practice with captive balloons, and, when the weather is unfavourable for them, with kites. To a certain extent observation of artillery fire from a captive balloon was carried out during the war in South Africa, but I have not heard of this being tried of late years, and I am convinced that it is necessary.

The next matter I should like to deal with is the question of some means being provided of indicating to the artillery how far our own infantry have advanced in an attack. Some years after the war we did a lot of practice with flags and screens, but that has been dropped. It is absolutely impossible to tell friend from foe, and I am sure we ought to start practising again at manœuvres, with some sort of appliances of the nature of flags, screens, or Dietz discs. Certainly during some periods of this year's manœuvres it was impossible to tell whether the various lines of infantry which appeared on the battlefield were our own friends or belonged to the enemy.

Brigadier-General E. J. Phipps-Hornby, V.C.: I am rather sorry that more infantry officers have not taken part in this discussion. I am afraid most of us here are artillery officers, and I think we are all agreed as to the importance of co-operation. Before I came to this meeting I

looked up in a dictionary the meaning of the word "co-operate," and the definition I found given was, "to labour together for the same end." All artillery officers that I am acquainted with are always labouring to assist infantry; but when I have spoken to infantry officers on the subject I have always met with difficulties:—"They cannot spare the officers; they cannot let us have the telephone lines," and so on; it is a pity they do not "co-operate," that is to say, the infantry and artillery officers do not work together for a common end. I think, if our handbooks on drill are looked at, it will be found laid down that it is the artillery who have to co-operate with infantry; but I maintain that the proper rule is that the two arms should co-operate together, and I think that is the direction in which we want to move. How it can be done is a difficult question. I have heard it discussed very often, but I have never heard any very clear solution expounded.

OBJECTIONS TO ARTILLERY OFFICERS IN THE FIRING LINE.

A few years ago the point of the necessity of having an artillery officer in the firing line was very much emphasized. I am sure nothing could be more fatal to a successful issue to an action than to have artillery officers in the firing line. Artillery officers can be spared for the firing line in times of peace, because no bullets are flying, and there are as many of them at the end of the day as there were at the beginning; but in the case of real warfare there would be a good many missing. What is more important is that I do not believe the information which they would send back would be worth anything. As infantry officers know, when anybody is in the firing line all they see is a very small area in front of them, and their whole interest is concentrated on that area and their feeling is that the fire they are suffering from is more severe than what anybody else can be suffering from, and naturally they send back and say, "Here is where the fire of your guns is wanted." I am quite sure we do not want any artillery officers in the firing line. Where they ought to be is with the brigadier-generals of infantry. They could then give information to the brigadier-generals, who could either act on it—if it seemed to be sufficiently important—or it could be referred to the artillery commander of the whole division for his opinion.

DIFFICULTIES OF COMMUNICATION.

Then comes in the question of communications, which is a most difficult one to contend with at the present time. There are not sufficient means of communication. Telephone lines are installed between the brigadier-generals of infantry and their battalions, and the divisional general is linked up by other lines, but these lines are not sufficient for the work they have to do. I know from my own experience of commanding the artillery at five or six divisional trainings and manœuvres that if you want to get your messages through the Signal Company's lines you have to wait a very long time. On one occasion of this year's manœuvres I sent a message to one or two brigades of artillery. The number of words was over 85, and it, of course, took an exceedingly long time for the Signal Company to write down 85 words in the stereotyped way in which it is done, to have them sent through to the other end and copied off again and for a messenger to take the message to the unit concerned. I think some other arrangement ought to be made with regard to means of communication. I believe the simplest way would be to employ men

on horses or men on bicycles. Of course, it depends what the country is like.

NEED OF DISTINGUISHING MARKS ON FLAGS.

Flags are useful, but they are no good unless there is some distinguishing mark on them. I speak with some feeling on that point, because at some manœuvres about six years ago I was with the cavalry, and I left three batteries of horse artillery on a hill behind me and told them I would signal to them when I wanted them to come on. I signalled for the best part of an hour without getting them to see me, and at last one of my subalterns came galloping up and said, "All your batteries are 'scuppered.'" I said, "What has happened?" He said, "A squadron came through and has taken the lot; they are all out of action for 20 minutes." I said, "I have been calling you up for the last hour. Why did not you see me?" He replied, "If you were back there you would see hundreds of flags all signalling at the hill, and we could not distinguish our flag." The result was that the batteries were "scuppered." I have advocated the idea of coloured flags for artillery for a good many years, but I am sorry to say without any result.

With regard to my suggestion of men on horses and bicycles, I would point out that the distance they would have to travel would never be very great. I believe at this year's manœuvres no horsemen or cycles would have had to go more than two miles to get to the furthest brigade. I am quite sure that this means of communication would be a good deal quicker than writing all these messages and sending them through the telephone lines.

Of course, there is only one position for the C.R.A., and that is with the G.O.C. of the Division; there is no doubt about that, and I think it is beating a dead horse to talk about it. With regard to the control by superior and subordinate commanders, I think that matter is well understood at the present time. With regard to the difficulties of distinguishing between friend and foe, that is a matter about which something ought to be done. It certainly is very difficult to distinguish friend and foe, and I should be very sorry to say how often during the war I shelled some of my own side.

One point in the paper was of the greatest interest to me, but it is a point on which I do not agree with Major Budworth. He referred to shields being of a certain amount of use. I do not believe they are as valuable as he imagines. I have made diagrams of them with a shell fire coming from 1,500 yards, and you may take any shell you like which bursts in line with the shield and just in front of it, and you will find that the whole detachment will be knocked out by the bullets of that shell. If that can be done at 1,500 yards it must be done much more easily when you get a longer range. The shield ought to be much higher, in my opinion, and I do not know why it is not, except that it is a matter of weight and a little difference in the centre of gravity.

There is another matter which I think ought to be enforced. There have been doubts about it for some time, but I am glad to see that opinion seems to be coming round more to the one standard; that is with regard to the issuing of Divisional Orders. The artillery is not a local arm at all. Artillery has to support infantry in every part of the field, and so I think it is incumbent on every artillery officer to know exactly what is being done by the division and what the General of the Division intends to do; and I think those Divisional Orders ought

to be sent in full to every brigade of artillery. When first I went in the 4th Division nearly four years ago, there was a great inclination not to send out the Divisional Orders to anybody except the C.R.A., but I am glad to say that now-a-days the authorities seem to be coming round to the view, which I think was originated by General Davies, that every brigade of artillery should have the Divisional Orders.

The Lecturer, Major C. E. D. Budworth, R.H.A., in reply, said: I do not think that there is much need for further discourse on my part. Those officers who have kindly made criticisms have stated their points of view very clearly. I shall confine myself to offering a slight personal explanation. I did not do so when I started my lecture, because I was taught to avoid it by an American citizen, who once remarked to me that most Englishmen when they got up to make a speech started by apologizing for not being able to do so and then went on to prove it. That has always made me careful not to commence with an apology. But the apology I now want to make is for speaking on this subject before so many officers who I realize have very much greater experience than I have. I can only thank you, Sir, for presiding, and you, gentlemen, for the very kind attention which I have received.

The Chairman, Lieut.-General Sir J. M. Grierson, K.C.B.: Gentlemen, I do not think that Major Budworth needed to make those last remarks of his. He is well known amongst us as an authority on artillery matters, and as a matter of fact I believe he has had a good deal to do with the writing of *Field Artillery Training*, the principles of which he has been so ably expounding to us to-day. His lecture, to my mind, is simply an enlargement of the regulations which are laid down in our *Field Artillery Training*, and in *Field Service Regulations*, which, of course, enunciate the same principles.

There is no doubt that co-operation between the two arms must start from the top, and the control of both the artillery and the infantry must be in the hands of one man. It does not matter what the size of the force is. The divisional commander, as long as his division is working to one end, must keep control of the whole of the artillery in the hands of his C.R.A. If any portion of the division is detached, or is working for a particular object, and is more or less separated, then a smaller group for fighting is formed, and a portion of the artillery is placed at the disposal of the officer commanding that group. If a brigade of infantry is told off for a certain operation, then artillery is, by order, attached to it, and it is laid down in *Field Artillery Training* that the officer commanding that artillery has to report himself at once and place himself at the disposal of the officer commanding the infantry. This same principle applies to units below a brigade. The one great principle which must be maintained, if success is going to be attained, is to keep the control of as much of the artillery as possible in the hands of the commander of the body of troops, whatever it is.

What General Findlay said about the position the infantry commander should take up is very important. He must also think of the co-operation of the artillery, and it is very desirable that he should be in immediate touch with its commander. Therefore, in choosing his position he should try to get a place which would suit the artillery officer's requirements as well as his own. It will generally be found that a place which suits the artilleryman will also suit the infantryman. If the artillery com-

mander has to go away some distance from the infantry commander, he must leave somebody with him. I quite agree with General Phipps-Hornby that it is sheer nonsense to have artillery officers in the firing line. That can never be. Their view must be limited there, they only get a small local impression of what is going on, and they would never get their reports back in time to be of any use. The furthest forward he should go is to the station of the commander of a brigade, or perhaps even of a battalion, but no further.

PRACTISING CO-OPERATION IN PEACE.

With regard to the question of how we are to train in time of peace for that co-operation which is so essential in war, I most thoroughly agree with Colonel Geddes and Major Rowan-Robinson that the way to ensure co-operation in war is to make the officers of artillery and infantry as intimate as possible in time of peace, and the first thing is to teach them what the others do. Artillery officers must be attached to the infantry as much as possible. I know it is very difficult to get officers enough to do the work, but it is so important that artillery officers should know the methods of infantry that I think everything possible should be done to attach artillery officers to the infantry. They need not be permanently attached, but a brigade of artillery could be affiliated to a brigade of infantry for training purposes, and the officers can go out with its units when any field work is being done. Of course, it is very important that the officers should do practical work; they will never learn anything by simply looking on. When I was in command of a division at Aldershot, by my orders the artillery majors and captains took command of companies of infantry, and they performed that duty exceedingly well. That is the way for artillery officers to learn the principles of infantry work and get that personal equation which Colonel Geddes referred to.

The attaching of infantry officers to artillery is a more difficult matter, and as someone said, it is not so necessary. But it is very necessary that they should attend artillery practice camps in order to see what the artillery really can do. Above all, it is necessary at all periods of training—I will not say company training, but certainly battalion training and upwards—that artillery should as much as possible go out with the infantry and the two arms work together.

It only remains for me to thank Major Budworth in your name for his interesting lecture, and I also think we ought to congratulate ourselves on having heard a very great deal of sound opinion from the officers who took part in the discussion.

AMMUNITION SUPPLY.

By Brevet Major C. N. Buchanan-Dunlop, R.A.

MODERN Q.F. equipment necessitates a supply of ammunition which a few years ago would have been considered abnormal, and its amount will certainly not be lessened by the most recent methods of artillery fire tactics which are now employed. This is a universally acknowledged fact, and in consequence large reserves of ammunition must be collected within reasonable distance of the battlefield, but there seems to be no obvious reason why so much of this ammunition should be brought into the firing line at the same time as the guns, *i.e.*, in the first line wagons. In explanation of this, it should be noted that a battery consists of six guns and twelve wagons. When the guns come into action six of these wagons known as the "Firing Battery Wagons," are driven up beside the guns, one wagon to each gun, and there left, the teams then retiring to the wagon line, where the other six, or First Line Wagons, and the gun teams form up under the orders of the battery Captain. The "First Line Wagons" and "Firing Battery Wagons" are interchangeable, and, when the latter are empty, or a change of position requires that the battery should move with a large supply of ammunition, the "First Line Wagons" take the place of the partially empty wagons, which in their turn are refilled as opportunity offers from the Brigade Ammunition Column.

As organized at present, the method of ammunition supply is cumbersome and rather uncertain. A form of Brigade Ammunition Column corresponding to the German Light Ammunition Column, formed of the First Line Wagons and the existing Brigade Ammunition Column might be less clumsy. The Brigade Ammunition Column, as it exists on paper, consists of one wagon per gun, and seems to be a superfluous link in the chain of ammunition supply.

The present Brigade of Field Artillery, with its 18 guns and 36 ammunition wagons, is a most cumbersome unit, of which the unwieldiness would obviously be much increased if the gun ammunition wagons of the column were joined to those of the first line, while the S. A. A. Carts, which form part of the column, would, under these circumstances, be stranded. This arrangement then appears less suitable than the alternative suggestion, *viz.*: To relegate the First Line Wagons to the Brigade Ammunition Column.

It is proposed to consider this suggestion under the following circumstances:—

(1) Advance. (2) Battle. (3) Retreat.

(1) ADVANCE.

If a force of any strength is advancing the columns of the fighting troops must be kept as short as possible, and the main body of the infantry must be close to the head of the column.

Considering the case of a division on a single road. With the advanced guard, according to more recent German ideas, a force of two F.A. Brigades would not be out of proportion. The road spaces, neglecting distances between units, would work out as follows:—

Two Brigades = 6 Batteries. With these are 36 First Line Wagons.
= 36 x 20 yards.
= 720 yards.
Say, roughly, half a mile.

By relegating all these First Line Wagons to the Brigade Ammunition Column, which would move in rear of the fighting troops, the length of road occupied by this advanced guard would be shortened by half a mile, *i.e.*, 15 minutes' marching. The length of the road occupied by the fighting troops of a whole division would be shortened by twice this amount, the same alteration being made in the 3rd F.A. Brigade and the Howitzer Brigade. Total distance by which the column of fighting troops in a division is shortened:—

3 F.A. and 1 Howitzer Brigade = 4 Brigades.
= 72 wagons.
= 72 x 20.
= 1,440 yards.

i.e., nearly one mile, or 30 minutes' marching.

F.A. Training, para. 152 (2), states that the artillery of the advanced guard "by a wide dispersion of available guns, or liberal expenditure of ammunition" will help to deceive the enemy as to the strength of the force opposed to him. Even taking into consideration this liberal expenditure of ammunition, it is difficult to imagine the case of an advance, or of an advanced guard action, where fire would be so rapid that the 100 rounds carried in the firing battery wagons and gun limbers would be expended before the wagons from the Brigade Ammunition Column could trot up from their position in rear of the fighting troops.

If the division were marching on two or more parallel roads the time necessary for the arrival of the Ammunition Column would be much shortened. A rough calculation, based on the data given in F.S. Pocket Book, puts the Ammunition Column some seven miles behind the head of the column. Assuming that no cross-roads or by-lanes could be

used to reach the batteries, two-and-a-half hours, or at the outside, three hours, might elapse before more ammunition could reach the guns.

Is then the ammunition carried in the gun-limbers and wagons sufficient to last the batteries this space of time?

Ammunition carried:

Gun limber	24 rounds
Wagon limber	38 rounds
Wagon body	38 rounds
Total ...	100 rounds

Maximum rate of fire allowable for three hours is $\frac{180}{100}$ or 1.48 minutes per gun, rather quicker than section fire, 1 min., or battery fire, 20 seconds.

Few batteries could keep up either of these rates of fire for three hours.

Continuous bursts of rapid fire might exhaust this supply in considerably less time, but it might almost as easily exhaust the extra ammunition available at the guns if the First Line Wagons were up, and no battery so extravagant in expenditure of ammunition would be tolerated for long at the front.

(2) BATTLE.

During the actual fight, F.A.T., para. 229 (5), suggests one mile to the rear as a suitable position for the Brigade Ammunition Column, while para. 193 (5), lays down half a mile as the maximum distance to the rear of the wagon line. From the point of view of the accessibility of the First Line Wagons the difference between these two distances is practically negligible.

In the same para. F. A. T., 193 (5), the great difficulties that the captain of a battery will have in finding sufficient space under cover for the large number of wagons and teams that he commands is anticipated, and a sub-division of the wagon line suggested. This sub-division would be unnecessary were the size of the wagon line reduced by the relegation of the First Line Wagons to the Brigade Ammunition Column.

(3) RETREAT.

In a retreat the first thing to be done is to send back the First Line Wagons to some convenient position in the rear, whence they replace the empty Firing Battery Wagons. This could be done most effectively from the Ammunition Column one mile in rear.

On manœuvres in Great Britain First Line Wagons are rarely present, so that the congestion on the roads and the obstacles to manœuvre on to the battlefield, which they would present, are perhaps hardly recognized.

Some of the advantages of relegating the First Line Wagons to the Brigade Ammunition Column would seem to be:

(1) That the freedom for manœuvre of the batteries and other fighting troops, would be greater.

(2) That the supply of ammunition would not, appreciably, suffer in the preliminary stages of the fight, whilst in the later stages the supply would be more continuous and uniform.

(3) That the Brigade Ammunition Column would be in direct touch with the Firing Battery on the one hand, and the Divisional Ammunition Column some two miles in rear, on the other. A further advantage would be an added lustre to that most important, if unappreciated, unit, the Brigade Ammunition Column.

PROPOSED ORGANIZATION OF BRIGADE AMMUNITION COLUMN.

In the following remarks the question of ammunition columns is regarded chiefly from the artillery point of view, though, as regards ammunition supply, a few minor details of organization and training would make this nucleus of an ammunition column expert in its dual capacity of supplying ammunition to infantry and artillery.

On paper an ammunition column forms part of each field artillery brigade, and in India these columns actually exist, while in England they exist in War Establishments, and would presumably be formed on mobilization, and entrusted with the vital duty of supplying ammunition to the artillery and infantry. This duty sounds a simple one, but the fact that in many, probably most cases, wagons and S.A. A. carts would have to find their way to various units, unattended by any officer or N.C.O., indicates that some previous training is advisable, if not indispensable, to insure the safe arrival of ammunition at the units to which it is dispatched.

In war time an ammunition column supplies its batteries with men, horses and equipment, as well as with ammunition, and undoubtedly battery commanders would be glad to ensure the efficiency of some of those officers, N.C.O.'s and men who would be likely to join them on service for the replacement of casualties. Both these requirements can be fulfilled. By relegating their First Line Wagons to the Brigade Ammunition

Column each battery would form the nucleus of its own section of that column, and thus possess a trained cadre capable of expansion on mobilization. As regards *personnel*, one extra subaltern and one sergeant would be required for each section of the column.

In the foregoing case batteries on the higher establishment only have been considered. In the case of batteries on the lower establishment each six-gun battery could form a four-gun battery and a section ammunition column. No extra officer or sergeant would then be necessary as an officer and two sergeants would be detached with the section. In both cases batteries would train their own sections of the ammunition column, and on brigade parades a complete ammunition column of three sections could be formed and manœuvred as such.

On mobilization cadres of ammunition columns would already exist, and would be brought up to strength simultaneously with their parent batteries, each unit drawing the necessary extra equipment.

A Brigade Ammunition Column at war strength would then consist of 36 ammunition wagons with limbers, the remaining vehicles as in war establishments, with the addition of one G.S. cooks' wagon and one telephone cart per brigade. Lower establishment batteries could be expanded into six-gun batteries as required.

If these Brigade Ammunition Columns existed in peace time officers of the artillery and of the directing staff would learn by practice on peace manœuvres to keep roads and approaches clear, and not to block the movement of other troops. It would be instructive to ascertain by trial how close to the front of a position ammunition columns would be allowed in intersected country, as, for example, in the eastern counties. By this practice artillery officers would learn the difficulties of other troops and appreciate the arduous duties which at present devolve upon officers engaged on Transport Services.

As regards *personnel* the extra expense would not be great; only one subaltern and a sergeant would be required for each section formed from a battery on the higher establishments, sufficient N.C.O.'s, men, and horses, to form the requisite nucleus already existing.

If for manœuvres a comparatively senior officer were required, a captain could be spared from one of the training brigades. As this same captain would command the ammunition column on mobilization, it would be a great advantage for him to gain some practice in the handling of his command.

In the absence of this captain the Adjutant of the brigade could be made responsible for mobilization equipment of the

ammunition column, while peace equipment would be in the charge of each battery.

There is probably some sufficient reason why Brigade Ammunition Columns exist only on paper, but if it is only one of expense the suggested organization might overcome the difficulty.

ESTABLISHMENT OF BRIGADE AMMUNITION COLUMN.

Peace.		War.		—
Present.	Proposed.	Present.	Proposed.	
	3	3	4	Officers
	3	7	10	S. Sergts., Sergts.
	80	142	220	N.C.O's. & men.
	86	152	234	Total.
	—	1	1	Bicycle.
	—	7	7	S.A.A. Carts
	1	1	1	Water ,,
Non-Existent.	1	—	1	Wagons: G.S. for Cooks
	18	18	36	,, Amn. with Limbers
	—	3	3	,, G.S. for S.A.A.
	—	1	1	,, G.S. for Stores.
	1	—	1	,, Telephone.
				Train.
	1	2	3	,, G.S.

ORGANIZATION OF THE NAVAL SCHOOLS OF GERMANY AND AUSTRIA.

Notes collected during a visit paid to the naval establishments of Germany and Austria, by Captain Señor Don Augusto Miranda, and Lieutenant D. Manuel Andujar.

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GERMAN NAVY.

THE organization of the German Navy corresponds to a state of society, to customs, laws and aspirations differing entirely from our own. Unless this is borne in mind, it is impossible to appreciate a system of departments, which, it is safe to say, is quite inapplicable to our (Spanish) political and social fabric.

* * * *

The German Navy has a definite and immediate objective; everything must be prepared for a rapid, energetic and decisive action. Her ships, equipped by her national industry, rich in resource of every kind, provided with war material of the highest efficiency, must be ready to dart at a given moment, against an enemy whose fleets await them almost at the mouth of the German ports. The first encounter, fierce and terrible, will decide the campaign, and will influence the future of both nations. The partial actions, the long blockades, the prolonged manœuvres of fleets, which require such seamanship, such skill in the personnel, will necessarily be eliminated in the future war. All that is required is men of action, with the determination to win in one day of supreme and fierce struggle.

There will be no scientific or vague speculations. Private workshops will construct the ships, will mount the guns, will provide the technical personnel, will instal all the machinery and all the arms for immediate and perfect action; only skill in directing and rapidity of action will be required of the officers. It is on this principle that the organization of the German Navy is founded, and to this principle is subordinated every detail of the education of the officers. It is not claimed that the officers possess a profound scientific knowledge of the mechanism nor even sufficient practical acquaintance with the details for handling it. The first is the province of the Naval Architects; and for the second there exists the class called "deck officers" (warrant officers), to whose functions the Saxon nature readily adapts itself; a class between petty officers and officers,

composed of individuals, whose practical knowledge of one single subject is being constantly improved by frequent alternations of practical experience and teaching in the schools. From this class are drawn and placed respectively under the officers concerned, experts in gunnery, torpedo and engineering, highly trained by constant and exclusive employment of the one machine and perfected in the schools by theoretical instruction, limited in extent, but of great efficiency.

Relying on these assistants, the German naval officer does not require a profound knowledge of the scientific part of his machinery, nor familiarity with details, but concerns himself solely with the direction of the whole.

There are, besides, other peculiarities of race, and of political organization, which influence details, and are at first sight incomprehensible to us. In war and executive matters, the control of the Emperor is absolute and personal. He issues his orders directly to the Chiefs of the different departments, without the intervention of the Minister, which is only exercised in the administrative part. Contracts, construction, etc., are under the Minister's control, but the Commanders-in-Chief of the fleets and of the naval stations, the heads of the departments of artillery and of torpedoes, and those of the centres of instruction receive orders directly from the Emperor. Their personal responsibility to him is therefore unavoidable, and effective.

The Emperor, for his part, issues concise orders, without entering into details, and this compels the subordinate to exercise his own initiative. The result of this system is, first a perfect knowledge on the part of the Emperor of the fitness of the personnel; and secondly, that each individual is accustomed to act on his own responsibility, and on his own initiative, unhampered by any other consideration than that of carrying out the design of the Emperor.

It is evident that this tends to produce admirable results in the spirit of the war organization; but on the condition that the personal fitness of the Emperor is fully equal to the great requirements of such an important *rôle*. Everything depends on this.

There are other important factors which must not be overlooked, if we would understand and judge the organization of this navy. The democratic spirit, claiming equal chances for all, which influences all the acts of Governments of the Latin nations, has not yet impressed itself on the Teutonic race. It is therefore not surprising to find strict rules excluding the lower grades of society; such, for example, as the rules determining the entrance to the Academy in the first instance, and later on to executive rank, or as those which forbid the lower grades of engineers to marry if they aspire to the rank of officers.

This same spirit of differentiation which pervades the whole fabric of society, and is accepted by the lower classes themselves, facilitates the exercise of military authority without requiring great scientific or intellectual knowledge.

The combination of these circumstances creates an atmosphere absolutely different, not only from our own, but from that of all maritime nations. It is not thought necessary to give officers an extensive scientific training, which might be useless and would probably quench in them an activity which should be applied rather to stimulating qualities of another order. Neither is there any intention of adopting the system of evolution, which other nations have initiated in the organization of engineers; there will continue to be, above all, practical men with a career limited to the post of commander; because, it is said, they have not the wherewithal to fill the higher posts.

The course of instruction of the personnel of the different branches is founded upon these ideas, and we proceed to lay the scheme before our readers.

EXECUTIVE BRANCH OF OFFICERS.—The maximum age for admittance as cadet is 18, and a certificate of the standard of education of "bachelor" is sufficient to qualify him for entrance. A Commission of the Inspectorate of Schools examines the antecedents of the candidate's family more closely than his diploma, and his admission is then determined. It is possible also to enter before the age of 16, without having attained the standard of "bachelor"; but in this case, and with the consent of the Board, the candidate must pass a qualifying examination in arithmetic, algebra (including quadratic equations), geometry, plane and solid (elementary), plane trigonometry, the rudiments of physics (mechanics, light, heat and electricity), French and English (to read and translate).

During the first six months the cadets receive military training on land, and then at once embark in the cruisers exclusively reserved for this purpose. These vessels, of 5,600 tons, are the "Herta," "Freya," "Hansa," and "Victoria Luisa."

The instruction given in these cruisers, which are at the same time schools for seamen apprentices, is of a practical character; they are taught the principles of seamanship, including practical navigation and pilotage, and sufficient astronomy for the determination of latitude by the meridian. In gunnery they learn the handling of the guns and firing at the target. In the engine room they perform the mechanical duties of each department in all their details. Every midshipman must have kept at least 12 watches of two hours each as stoker mechanic, and 24 as artificer in the engine room. The study of gunnery and of engineering is purely descriptive. They learn, besides, French and English.

During the first year, the progress made in their studies is carefully watched, and at the close of the course, the students

pronounced competent undergo an examination on board the same ship before they can pass into the Kiel School as midshipmen; whilst those classed as competent, but who fail in the examination, may repeat the course.

The school at Kiel occupies at present a building, which although sumptuously furnished and decorated, does not fulfil the modern requirements for space in establishments of this character. The German Government, alive to this defect, is constructing an edifice adapted for the purpose at Sonderburg.

The midshipmen remain one year in this school. The accompanying table gives the list of lectures delivered, and the time devoted to each subject in the year's course, which is the only one of a theoretical character in the career of the German officer.

TABLE OF STUDIES IN THE SCHOOL.

Subjects.	Hours weekly in classes.	Observations.
Navigation, seamanship and knowledge of the ship	6	1½ hours a week in navigation work and a practical course in a sailing vessel during one week.
Gunnery and hydraulics	2	—
Engineering	3	—
Organization of the Departments	2	—
Construction	2	—
Mathematics	2	During the summer, 12 double hours approximately for land tactics. During the winter six double hours given to the same subject, in such form as the Director of Studies may decide.
Natural sciences ..	2	—
Electrotechnics	2	—
English	2	—
French	2	—
Mines (in summer)	1	—
Land tactics, fortifications in winter	1	—
Drawing and languages optional	—	—

In addition, the afternoons are employed as follows:—

A. IN SUMMER, *Weekly*: Two double hours seamanship; one hour gymnastics; one hour fencing; one hour signalling. *Monthly*: One double hour in engineering, and, during the term, seven double hours of navigation.

B. IN WINTER: Six double hours gunnery; five hours construction; one hour gymnastics; one hour fencing; one hour signalling; one hour riding; one hour dancing.

The text-books for the course of instruction contained in these lectures could scarcely be more elementary. The one for

mathematics includes arithmetic, algebra, geometry, and trigonometry. It consists of 450 pages, and the previous knowledge of the four rules of arithmetic with whole numbers is all that is required for its study. The theories of arithmetic and algebra are confined to the first 88 pages (the Spanish *Aritmética de Salinas* occupies 306 pages). Plane geometry, with numerous applications to pilotage, occupies the next 100 pages. Trigonometry is studied in all its branches; this science, with the principles of solid geometry, which are indispensable for the comprehension of all that relates to the sphere, and with application to cosmography and nautical astronomy (triangulation) occupies the rest of the book.

The German officer does not study calculus. Analytical geometry is epitomized in 80 pages, which treat principally of the parabola, and touch lightly on the other curves of the second degree. This book contains all that is required for the mathematical course.

All that refers to natural sciences is contained in a little book of 94 pages, devoted to the most elementary principles of mechanics, heat, light, magnetism, electricity and chemistry.

The class books on the applied sciences do not go much further. Cosmography, navigation, meteorology, oceanography and surveying are contained in a volume of 280 pages.

Engines occupy 300 pages of a book, which, after some elementary explanation of thermodynamics, gives the description of the engines actually in use in the German Navy, not only for propulsion, but for every kind of use on board. It describes, therefore, reciprocating engines, turbines, internal combustion, all kinds of auxiliary engines, dynamos, electro motors, refrigerators, ventilators, pumps, etc. It is all in a very condensed form, and the scientific is subordinated to the popular character.

Gunnery is the subject of a much larger work, and is divided under three heads; the first is the description of the material in use in the German Navy; the second part, of 50 pages, is a fairly complete and very practical study of external ballistics and fire control; and the third portion is a very elementary treatise on internal ballistics, powder and ammunition.

When this course of study has been completed in the school, the students pass into the Gunnery School of Sonderburg, where, for three months, they devote themselves exclusively to the theory and practice of this arm; after which, having satisfied their instructors in this course, they pass into the torpedo school on board a special ship, where they remain two months. Another examination follows, and they are then attached for one month's purely military service to one of the colonial battalions. After this last stage of apprenticeship, the midshipmen have the privilege of wearing swords, and then enter for a year's service afloat.

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The text-books for the course of instruction contained in these lectures could scarcely be more elementary. The one for

mathematics includes arithmetic, algebra, geometry, and trigonometry. It consists of 450 pages, and the previous knowledge of the four rules of arithmetic with whole numbers is all that is required for its study. The theories of arithmetic and algebra are confined to the first 88 pages (the Spanish *Aritmética de Salinas* occupies 306 pages). Plane geometry, with numerous applications to pilotage, occupies the next 100 pages. Trigonometry is studied in all its branches; this science, with the principles of solid geometry, which are indispensable for the comprehension of all that relates to the sphere, and with application to cosmography and nautical astronomy (triangulation) occupies the rest of the book.

The German officer does not study calculus. Analytical geometry is epitomized in 80 pages, which treat principally of the parabola, and touch lightly on the other curves of the second degree. This book contains all that is required for the mathematical course.

All that refers to natural sciences is contained in a little book of 94 pages, devoted to the most elementary principles of mechanics, heat, light, magnetism, electricity and chemistry.

The class books on the applied sciences do not go much further. Cosmography, navigation, meteorology, oceanography and surveying are contained in a volume of 280 pages.

Engines occupy 300 pages of a book, which, after some elementary explanation of thermodynamics, gives the description of the engines actually in use in the German Navy, not only for propulsion, but for every kind of use on board. It describes, therefore, reciprocating engines, turbines, internal combustion, all kinds of auxiliary engines, dynamos, electro motors, refrigerators, ventilators, pumps, etc. It is all in a very condensed form, and the scientific is subordinated to the popular character.

Gunnery is the subject of a much larger work, and is divided under three heads; the first is the description of the material in use in the German Navy; the second part, of 50 pages, is a fairly complete and very practical study of external ballistics and fire control; and the third portion is a very elementary treatise on internal ballistics, powder and ammunition.

When this course of study has been completed in the school, the students pass into the Gunnery School of Sonderburg, where, for three months, they devote themselves exclusively to the theory and practice of this arm; after which, having satisfied their instructors in this course, they pass into the torpedo school on board a special ship, where they remain two months. Another examination follows, and they are then attached for one month's purely military service to one of the colonial battalions. After this last stage of apprenticeship, the midshipmen have the privilege of wearing swords, and then enter for a year's service afloat.

The examination at the end of this last year closes the period of instruction, and the place which the student takes in the examination, together with his previous record in the schools, determines his seniority in the list. But whatever may be the result of this examination, the student does not enter the Executive Branch of Officers until all the officers at the station to which he belongs, whether Kiel or Wilhelmshaven, have given their vote in his favour. Should even one officer alone raise objections to the entrance of the candidate on the ground of the dignity and reputation of the corps, it is sufficient to delay his admission, pending the decision of the Emperor.

The commanders of the ships have the power to delay the final examination for six months, and even to propose retirement on professional or social grounds. This is granted by the Inspectorate of Schools, of which Board a Vice-Admiral is head.

Promotion to the higher grades of the corps goes practically by seniority, because, although the regulations direct promotions by selection, this method is little employed, at present at all events.

SPECIALIZATION.—The officers of the Executive Branch of Officers performing the duties of naval lieutenants, are selected, not on their own initiative, but by direction of their superiors, to go through a course of gunnery which comprises two standards; the lower, which requires two months, is for the guns of cruisers; the higher, lasting three months, for the heavy guns of battleships. Should three years elapse without these officers being employed in the capacity for which they have specialized, they forfeit their title of specialist.

In the same way the "*Oberleutnants*" (lieutenants of less than eight years' seniority) have to go through a further torpedo course, which lasts three months. As in the previous case, the title of specialist is forfeited by three years' unemployment. In reality neither the torpedo nor the gunnery course gives any personal advantage or differentiation in the service.

SERVICE ON LAND.—The principal naval fortresses of the maritime departments in Germany are under the orders of the admirals who govern the latter. All the coast artillery from Kiel westwards is under the Navy, which maintains for this purpose six battalions of marine artillery, under the orders of the officers of the General Corps.

There is no marine infantry in Germany; there are army expeditionary forces ready to be embarked for service in the Colonies. But on board ship all duties are performed by the seamen, who are noted in that country for their warlike spirit and military bearing.

NAVAL ARCHITECTS.—Naval architects in Germany do not form a military corps; they are considered as civil functionaries, and are educated in civil establishments. Nevertheless, at the

commencement of their career, they spend a year in the training cruisers, and take turn and turn about with the students of the Executive Branch in the practical work.

ENGINEER OFFICERS.—Promotion in the ranks of Engineer Officers is practically limited to the comparative rank of "*Kapitän leutnant*" (naval lieutenant of over eight years' service), because, although there are posts ranking with major and lieutenant-colonel in the Army, their number is so small relatively to that of the officers, that it is only an exception that these posts can be obtained. On the other hand, the pay is always higher than that of other officers of equal rank. Their position on board is that of combatant officers, although inferior to that of the officers of the Executive Branch, who hold certain privileges, such as Presidency of the Mess, etc.

The candidates for entry as engineer sub-lieutenant must, as students, be under 22 years of age, they must have attained the standard of education of "Bachelor," or followed part of the course for this certificate like the students of the Executive Branch of Officers; they must pass a theoretical examination in elementary mathematics, the rudiments of mechanics and mechanical drawing, as well as a practical examination in what concerns their profession; they must, besides, show that they have served in private works, for at least 24 months, of which four must have been passed in boiler works, two in copper, and three in iron foundries, and 15 in machinery workshops. Having satisfied their examiners on these points, they then receive an exclusively military training for three months, and the other nine months of the first year are spent in naval vessels. At the end of the year they are examined on board ship by a commission selected from the fleet, and composed of one captain, one commander,[1] and three engineer officers. They pass two years more on board an armoured vessel; or one year in an armoured ship and one in a torpedo-boat as petty officer, keeping their watches, and pass on to Wilhelmshaven for a theoretical course.

The programme of this first year is as follows:—

Subjects.	*Hours per week.*
Engines	5
Electrotechnics	3
Mechanics	4
Physics	2
Chemistry	2
Higher Mathematics	6
Languages	4
Drawing	3

At the end of this year, the fourth of their career, they are promoted, and return as "deck officers" (warrant officers) to

1 "Korvetten-Kapitän," a rank approximately corresponding to commander.

the ship. There they do duty as assistant chiefs of the watches in the engine-room and stoke-hold, subordinate to the engineer officers, who are the chiefs of the watches. After four years' duty they return again to Wilhelmshaven, where they go through a year's course, comprising both theoretical and practical work. The following subjects are studied:—

Subjects.	*Hours per week.*
Engines	6
Electrotechnics	4
Mechanics	3
Physics	2
Chemistry	2
Mathematics	5
Languages (French and English) ...	4
Torpedoes	4

This ninth year of their career closes the period of training, and the result of the examination, combined with that of the previous examinations, and with the reports of their commanding officers, determines their seniority in the list of officers; but in order to take their place among the officers, a favourable vote must be obtained, as in the case of the officers of the Executive Branch; only in this case the officers of the Engineer and the Executive Branch vote. Those who aspire to become officers cannot marry until after they have attained this position.

ENGINEER OFFICERS (TORPEDO).—After the first six months of study, a certain number of the engineer students are selected from the others, and trained in torpedo boats exclusively. Later they spend a year at Wilhelmshaven, and when they have been advanced to torpedo "deck officers" they spend six months in the floating torpedo school, on board the "Württemberg." After this course they pass on to the school for torpedo practice on board the armoured cruiser "Friederich Karl," where they remain three months. Another year is spent in practical work in the torpedo workshops. After four years, reckoned from their advancement to "deck officers," they return to Wilhelmshaven and go through the second course with the engineers, and are finally promoted to officers under the same conditions as the other engineer officers. The most distinguished among those of both branches are afterwards sent for a two years' finishing course in civilian schools and institutes.

ELECTRICIANS.—The electricity department is confided in Germany to engineer officers, excepting the machinery required for the guns, which is under the control of the officers of the Executive Branch, assisted by "gunnery engineers," so-called. These latter are recruits, who can prove that they have served three years in private workshops. They are at once sent to the artillery division, where they are put through a three months' practical course on land; then they spend two

months in the "Kronprinz" (course of electricity); five months in gun factories, and in workshops for the construction of dock-yard machinery; one-and-a-half months in the school for gunnery; one-and-a-half in arsenal workshops. Having completed this course of training, they are appointed to ships, and having given evidence of their aptitude and skill, they are then recommended and promoted to petty officers.

The most proficient among them, after a fixed time of duty in the workshops, and four years on board ship, return to the gunnery school, where they go through a course which qualifies them for advancement to "deck officers."

LOWER DECK RATINGS.—The organization of the lower deck ratings in Germany is well worth study. The men drawn by recruiting, as well as the apprentices who have passed through the four floating Cadet Schools, are distributed between the depôts of Kiel and Wilhelmshaven, in the following four divisions, according to aptitude:—1, ordinary seamen; 2, artificers and stokers; 3, torpedo men for supplying the personnel for the torpedo-boats; 4, gunlayers, which includes not only those who have to work the guns afloat, but also those attached to batteries on coast.

These divisions are of the utmost importance in the German organization. From the time they enter the service until their discharge, the men never cease to belong to one or other division, always to the same, and completely independent of the others. The first two divisions are under the orders of an officer who in his turn receives orders from a superior officer, an Admiral, called the Inspector of the Navy. The last two divisions have each a military chief, but in what concerns the technical part of their duty they take orders from the Admiral Inspectors of the torpedo department and of gunnery respectively.

The personnel of each division is lodged in quarters especially adapted for their training, to which great attention is paid while the ships are being laid up. During this time the training is carried on in ships in reserve. The commanders of these divisions decide the promotions, regard being paid to the reports of the commanders of the ship.

It is in these divisions that are trained the petty officers, who afterwards have to perform the very important duties of warrant officers, "deck officers," as they are called in the German Navy. As we have said before, they are men eminently skilled in the use of one especial weapon, the gun or the torpedo.

The gunnery school is established at Sonderburg, and has several ships at its disposal fitted for the training of the personnel, among others, an armoured battleship, an armoured cruiser, and a small cruiser, all of modern type.

The torpedo school has its quarters on land, at Kiel, and has torpedo-boats of various types attached.

THE NATIONAL RESERVE.

By General Sir E. P. Leach, v.c., k.c.b., k.c.v.o.,
late Royal Engineers.

AT a time when the value of the Territorial Force is being seriously called in question by high military authority, when doubts are freely expressed on all sides that the nation is not obtaining full value for its expenditure upon the Territorial Force, and when the value of the fully-trained soldier has once more been clearly demonstrated in the Balkan war, may I lay before your readers a general view of the possibilities which a sound and practical development of the ex-Regular Reserve would appear to present?

Speaking generally, it will, I think, be conceded by those who still appreciate the loyal spirit which permeates the Territorial Force—and I count myself among the number—that Lord Haldane's scheme, from one cause and another, has failed to provide the numbers that this country unquestionably requires in time of national emergency, and at the outset of a serious European war.

From the figures given by Lord Herschell, in the House of Lords, it cannot also be longer questioned that the period of training of a large proportion of the Territorial Force has been unduly reduced, that the numbers annually absent from training are considerable, and that the standard of musketry attained is far from satisfactory.

To quote the official figures[1]:—

	Officers.	Other ranks.
The nominal strength of the Territorial Force is ...	9,236	252,152
Numbers who attended camp 15 days in 1912	6,885	154,995
Do., do., eight days	1,014	66,366
Failed to attend camp, but with leave	1,325	27,331
Absent without leave	37	6,019

The first question that will naturally be asked is—Were the absentees without leave punished?

I could give reasons, and cite instances which have, I believe, largely contributed to the present state of things, but this is not my object.

What I desire to emphasize is the potential value of the ex-Regular as a fighting man, and to indicate what I believe to be his legitimate position as a National Reservist with reference to the Regular Army on mobilization.

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[1] Parliamentary Paper. Cd. 6505.

THE ROYAL RESERVE REGIMENTS.

The idea of utilizing the time-expired Army Reservist is no new one.

It was tried in 1900 during the dark days of the South African war, when ten battalions, or Royal Reserve Regiments, as they were termed, upwards of 1,000 strong, were raised for a single year's service, at a time when the United Kingdom had been practically denuded of its Regular troops.

The position, in fact, was similar to that fore-shadowed by Lord Haldane as likely to again arise when the Expeditionary Force has left these shores, and when the country under present conditions may find itself largely dependent upon the Territorial Force for its home defence.

The limit of age laid down for the Royal Reserve Regiments in 1900 was 45. The men enrolled had left the Army with a "good" character, and when enrolled were "grouped" and classified by battalions. Married men—and most of them were married—received separation allowance. A bonus of £22 was paid on completion of a year's satisfactory service; £12 of which was paid on enrolment; £10 on discharge. The initial bonus was very soon recognized to be a mistake; and for reasons into which I need not enter, should never again be offered; the final bonus had been earned, and would have sufficed.

Otherwise, the organization was sound. The old soldiers rapidly settled down; little drill was required to bring them back to a high standard of efficiency, and musketry was distinctly good.

It was my privilege to have one of these battalions under my command in the North of Ireland—the Royal Irish Fusilier Reserve Regiment—and I say, without qualification, that as a fighting unit it could have more than held its own with some of our best Regular battalions.

Writing from memory, I believe that this particular regiment averaged 5 ft. 8 ins. in height, 11 st. 7 lbs. in weight, and 37½ years in age. When disbanded in 1901 its strength was just over 1,000 of all ranks, and every man would have volunteered for service in South Africa, had its services been required.

The weak point in the organization of these regiments was the officer. In this respect I was fortunate; but the records of many officers who joined them for duty had not been kept, and some were failures. The establishment laid down for officers was seldom maintained. This, however, is a matter which under present-day conditions should not recur, if the ex-officers composing the reserve of officers have been carefully classified, and their antecedents whilst serving have been duly recorded.

At the end of their year's service the Royal Reserve regiments were disbanded. Officers and men desirous of prolonging their service were drafted to garrison regiments for service in the Mediterranean and elsewhere. At home their place was taken by provisional battalions, grouped as before, and consisting largely of invalids from South Africa in the convalescent stage, and of recruits.

Two of these battalions served under me; and, as an illustration of the wastage of war, I may mention that, in one, some 88 officers and between 3,000 and 4,000 men passed through the ranks in the short space of two years.

The records of both Royal Reserve regiments and provisional battalions are no doubt available at the War Office. It would therefore be easy to verify the figures and to arrive at the cost, per head, of a National Reservist under the "most favoured soldier treatment," which Colonel Seely, speaking at a Territorial gathering, has recently foreshadowed.

UTILIZATION OF THE NATIONAL RESERVISTS.

But it would seem to be the idea of the War Office to utilize the National Reservist mainly to fill up the deficiency in numbers in the Territorial Force, and here I venture to think that so far as the ex-Regular is concerned a serious mistake would be made.

In the speech to which I have referred, Colonel Seely placed the number of men who have joined the National Reserve at 170,000. No details were given of the men's age, nor was it stated what percentage of them were ex-Regulars.

Judging, however, by the appearance of the veterans who paraded in Hyde Park before the King, no limit of age had been imposed, and a considerable percentage are known to be either ex-Volunteers or ex-Territorials. The ex-Territorial should join the Territorial Reserve.

A return of the National Reserve in the County of Dorset, furnished to the *Spectator*, for the month of November, supplies some further information. Of a total of 2,672, 50 per cent. are stated to be ex-Regulars, and 56 per cent. under the age of 45.

This return is furnished by one small county.

Clearly, therefore, there are large numbers of ex-Regulars in the United Kingdom, who, if sufficient inducement were offered, might be made available to bridge over the gap between the Regular units in the Field Army, the Special Reserve, and the partially trained and attenuated battalions of the Territorial Force.

The War Office alone can give accurate figures.

The first step is evidently to make an approximate calculation of the numbers likely to be available, and to fix an age

limit; the next to classify by arms and to decide what inducement shall be offered, and what training in return for that inducement shall be prescribed. I would here draw attention to the fact that the failure in the efficiency of the Territorial Force has been very largely due to the relaxation of the conditions under which its members originally elected to serve and train, *viz.*, for 15 days.

If we take the present strength of the first-class Army Reserve as a basis there are at least 150,000 ex-soldiers in the United Kingdom between the ages of 32 and 45, who, under the terms indicated, might enrol themselves. Probably there is a considerably larger number, but for our purposes these figures will be convenient. Behind these again will be another 50,000 between the age of 45 and 55.

INDUCEMENTS TO SERVE.

If an inducement, in the shape of an annual payment is made, it must clearly be accompanied by a definite agreement on the part of the soldier to serve where ordered, and such payment should be proportional to his fighting value and efficiency for field service.

The Army Reservist has a retaining fee of 6d. a day, or £9 a year. The National Reservist up to 21 years' service, if an ex-Regular, is at least worth half that sum, or, say, £4 a year. From 40 to 45 years of age, £2. I would draw the line at 45, although many men are still in their prime at this age, and would render valuable service on lines of communication or in defence of our ports. Their services should, however, be restricted to home defence, and they would not require a retaining fee of more than £1.

Under the policy sketched the ex-Regular National Reservist would, in fact, take the place of the old Section D. (which consisted of men who counted between 12 and 16 years' service), the length of service being extended to the full 21 years. The Army would here be closely following the system adopted by the Navy, which has established a Royal Fleet Reserve, "to provide a reserve of trained men for service in His Majesty's Fleet in time of emergency."

All men medically fit and of good character are eligible to join this Reserve, and up to a limit of 40 years of age, or 20 years' qualifying service. The only responsibility the men incur beyond service in time of emergency is one week's annual training. They enrol for five years, and can re-enrol up to the age limit named, or for such further period up to the age of 45 as will enable them to complete 20 years' qualifying service.

On discharge they receive a gratuity. During their Fleet Reserve service they are paid a retainer of 6d. a day, and during their week's training receive the continuous service pay of their substantive rating, with subsistence and lodging allowance if not lodged.

A gratuitous issue of clothing is made on enrolment, or an allowance in lieu. This uniform clothing the men retain in their own possession, and bring with them when they come up for training.

Colonel Seely has added that "clothing, rifles, and equipment are to be kept ready" for the National Reservist.

Training, however, is not mentioned, and without training of some kind the value of the force would be seriously inpaired. Eight days annually with a Regular battalion would probably suffice, and this addition to its strength would enable a Regular battalion on the home list to approximate for a few days in the year to war strength, and to carry out a part of its training under war conditions.

"What we shall do," Colonel Seely proceeded, "is to find out from each man the place in which he desires to serve and in which he can best serve in time of war."

Men, however, under an obligation, which it is to be observed will be more than "*honourable,*" must be held to serve where they are required; and in this connection I have clearly indicated that their regiments on mobilization would have the first call upon them, either with the Colours, or to swell the ranks of the Special Reserve. It is not their *rôle* to meet deficiencies in the Territorial Force, and for this reason although just credit must be given to County Associations for their action in bringing the National Reservist into existence, I should prefer to have their arms, clothing, and equipment stored at their regimental depôts, and upon the officers and staff of the Special Reserve battalions might well be thrown the extra work involved. The men might train with the nearest battalion or brigade, but on mobilization would go to their own arm.

The success of the scheme would, I am satisfied, depend largely upon the direct association of the ex-Regular with his old comrades, and regimental officers are alone able to appreciate the influence that these old-time factors exercise in the fighting ranks of the Army. It is *esprit de corps* quite as much as patriotism that will bring the ex-soldiers back to the Colours. Regimental associations, which are rapidly becoming general throughout the Army, have done much to foster this spirit.

FINANCIAL CONSIDERATIONS.

To deal with the financial aspect in detail would require a careful study of figures which are not easily obtainable. But to summarize:—

The Regular soldier, including lodging and barracks, costs his country something in the neighbourhood of £100 per annum.

The official figures[1] would place the cost of the "efficient" Territorial at something like £10 to £15.

[1] See page 102.

The ex-Regular Reservist, if properly clothed, armed, trained, and organized, would be cheap at this figure, and allowing for a full 15 days' training in camp, mainly devoted to musketry field practices, his cost would certainly not exceed the smaller sum.

In other words, for the price of a single battleship we might raise a valuable reserve to our Home Army of from 150,000 to 200,000 trained soldiers, still in the prime of life. Surely this is a possibility not to be lightly disregarded.

The foregoing scheme applies mainly to the infantry arm, but with modifications is equally applicable to all arms.

We must not forget that during the war in South Africa the strength of our Regular battalions in the field was largely maintained by drafts of immature lads, who, in some instances, had not completed their musketry training before leaving England; and by special service companies from the Militia.

Would not their efficiency have been very largely increased if we had had behind them, as a first reserve, an organized body of ex-soldiers?

Will the wastage of war in an European campaign be less? Will it not be immeasurably greater?

Are we not temporizing with a force of doubtful military efficiency and neglecting a body of trained soldiers possessing the one essential military virtue, "discipline?" This the ex-soldier never loses.

I have no wish to decry the value of the Territorial soldier in his proper sphere; I have had every reason to know his many good points. The "personnel" leaves little to be desired, but it requires time to develop, and time, unfortunately, it will never get; unless, between it and the Regular Army, we can interpose a body of fighting men capable of bearing the first brunt of war.

To County Associations, and to the Territorial Force, with its Regular staff, will probably, and within a measurable distance of time, be assigned the duty of carrying out universal training.

The ex-Regular must, in my opinion, throw in his lot with the War Office, and the further instructions of the War Office will be awaited with interest.

In reply to critics who question the practicability of the scheme upon financial grounds, I would add, in conclusion, that both Naval and Military Estimates must automatically rise. It is not possible for efficiency in our two great Services to be maintained if a hard and fast limit is placed upon the Annual Estimates, and if one party takes credit to itself at the expense of the other if it effects temporary reductions.

No addition can be made to the fighting reserve of the Army without a corresponding increase to the Army Estimates; but, when public sentiment has been aroused throughout the country, and when the appeal to the ex-soldier has met with such a hearty response, the opportunity, if lost, may not again recur.

IMPERIAL DEFENCE.

The following despatch from the Secretary of State for the Colonies to the Governor-General of Australia, the Governor-General of the Union of South Africa, and the Governors of New Zealand and Newfoundland, as to the representation of the self-governing Dominions on the Committee of Imperial Defence, was published as a Parliamentary Paper (Cd. 6560) at the beginning of this month :—

MY LORD,

Downing Street, 10th December, 1912.

SIR,

I am forwarding by post, for the confidential information of your Ministers, a record of the proceedings at the Committee of Imperial Defence on May 30th, 1911 (during the Imperial Conference) and on August 1st, 1912 (during the visit of the Canadian Ministers to London).

This record deals solely with the question of the representation of the Dominions on the Committee of Imperial Defence.

[*Omitted to New Zealand.* Your Ministers, who were present on the first occasion will remember that] the matter arose out of a resolution by Sir Joseph Ward on the Agenda of the Imperial Conference, asking that the High Commissioners of the Dominions should be summoned to the Committee of Imperial Defence when naval and military matters affecting the Oversea Dominions were under consideration. The unanimous view of all those present on May 30th, 1911, was that the representation of the Dominions should be not by the High Commissioner but by Ministers who would be responsible to their own colleagues and Parliament, and at the same time it was decided that a Defence Committee should be established in each Dominion which would be kept in close touch with the Committee of Imperial Defence at home. The Resolutions ultimately put forward by His Majesty's Government and accepted unanimously by the members of the Imperial Conference at the Committee of Imperial Defence were as follows :—(1) That one or more representatives, appointed by the respective Governments of the Dominions, should be invited to attend meetings of the Committee of Imperial Defence when questions of naval and military defence affecting the Oversea Dominions are under consideration. (2) The proposal that a Defence Committee should be established in each Dominion is accepted in principle. The constitution of these Defence Committees is a matter for each Dominion to decide.

The Canadian Government having changed in the Autumn of 1911 it was necessary, when Mr. Borden and his colleagues visited England this summer, to put these proposals before them, as they were of course unaware of the previous proceedings. Subject to consultation with his colleagues in Canada, Mr. Borden provisionally accepted the resolutions as

passed and stated that he saw no difficulty in one of his Ministers, either with or without portfolio, spending some months of every year in London in order to carry out this intention. Mr. Asquith and I had, subsequently, several private conversations with him, at which he expressed the desire that the Canadian and other Dominions Ministers who might be in London as members of the Committee of Imperial Defence should receive, in confidence, knowledge of the policy and proceedings of the Imperial Government in foreign and other affairs. We pointed out to him that the Committee of Imperial Defence is a purely advisory body and is not, and cannot under any circumstances become, a body deciding on policy, which is and must remain the sole prerogative of the Cabinet, subject to the support of the House of Commons. But, at the same time we assured him that any Dominions Minister resident here would at all times have free and full access to the Prime Minister, the Foreign Secretary and the Colonial Secretary for information on all questions of Imperial policy. In a public speech which I made a short time ago I used the following words :—

> "There is, on the part of Canadian Ministers and people, a natural and laudable desire for a greater measure of consultation and co-operation with us in the future than they have had in the past. This is not intended to, and it need not, open up those difficult problems of Imperial Federation which, seeming to entail questions of taxation and representation, have made that policy for many years a dead issue. But, speaking for myself, I see no obstacle, and certainly no objection, to the Governments of all the Dominions being given at once a larger share in the executive direction in matters of defence and in personal consultation and co-operation with individual British Ministers whose duty it is to frame policy here. I should welcome a more continuous representation of Dominions Ministers, if they wish it, upon the Committee of Imperial Defence; we should all be glad if a member or members of those Cabinets could be annually in London. The door of fellowship and friendship is always open to them and we require no formalities of an Imperial Conference for the continuity of Imperial confidence."

The foregoing accurately represents the views and intentions of His Majesty's Government.

From Mr. Borden's public speech in introducing the Canadian Naval Bill, it appears that he accepts the proposals which we have made. The same offer is, of course, open to all the other self-governing Dominions if and when they wish to adopt it, but the proposal is not one of necessary or strict uniformity and can be varied in the case of each or any Dominion to suit their wishes or the special circumstances of their case. I should be glad to know, at their convenience, whether your Ministers desire to adopt some such method of more continuous connection in naval and military affairs with the Committee of Imperial Defence in the United Kingdom.

I have, &c.

(Signed) L. HARCOURT.

NAVAL NOTES.

HOME.

APPOINTMENTS.—The following are the principal appointments which have been made :—

Captains—C. F. Henderson to charge of Naval Establishments at Sydney; E. C. Villiers to "Actæon"; H. C. Lockyer to "Exmouth"; W. M. Ellerton to "King Alfred," and as flag captain; J. D. Kelly to be Superintendent of Physical Training; A. E. Chatfield, C.V.O., to "Southampton"; R. A. Nugent to "Highflyer," and as flag captain; C. D. Johnson, M.V.O., to "Minerva," and in command of Sixth Destroyer Flotilla; A. K. Waistell to "Vernon" for "Vindictive"; H. F. P. Sinclair for service on staff of the Inspector of Target Practice; R. A. Nugent to "Albemarle"; S. R. Fremantle, M.V.O., to "Victory" for Signal Committee; W. S. Nicholson to "Dreadnought"; V. G. Garner to "Leander"; F. Wray to "Defence," and as flag captain.

Vice-Admiral A. M. Farquhar succeeded Vice-Admiral Sir F. S. Inglefield, K.C.B., as Admiral Commanding Coastguard and Reserves, on the 1st inst.

Rear-Admiral C. E. Madden hoisted his flag at Sheerness on the 11th ult. on board the armoured cruiser "Antrim," as flagship of the Third Cruiser Squadron, on assuming command of squadron.

Rear-Admiral E. C. T. Troubridge, C.B., C.M.G., hoisted his flag on the 6th inst. on board the "Defence," as Rear-Admiral commanding the new Mediterranean Cruiser Squadron.

Rear-Admiral (Acting Vice) Sir G. Warrender, Bart., K.C.V.O., C.B., hoisted his flag on the 16th ult. in the battleship "Hercules," at Portsmouth, on assuming command of the Second Battle Squadron.

Rear-Admiral A. H. Christian hoisted his flag on the 5th inst. on board the "King Alfred," at Devonport, as Rear-Admiral in the Plymouth Sub-Division of the Home Fleet.

Rear-Admiral C. J. Briggs has transferred his flag from the battleship "Exmouth" to the "Dreadnought," which now becomes the flagship of the Fourth Battle Squadron.

The first-class armoured cruiser "Shannon" replaced on the 11th ult. the battle-cruiser "Indomitable" as flagship in the Second Cruiser Squadron, the "Indomitable" temporarily joining the First Cruiser Squadron as a private ship.

The new battle-cruiser "New Zealand" has completed her ship's company to full complement, and is to proceed for her first cruise to visit the great Dominion whose name she bears. It is understood she will leave England early in February, proceeding first to South Africa, where she will make a short stay at Cape Town, and then, after possibly visiting Port Elizabeth and Durban, she will proceed to Tasmania, and thence to New Zealand, after which she will return home to join the First Cruiser Squadron. Her sister ship, the "Australia," is to be the flagship of the new Australian Squadron.

The new destroyer "Acasta" has been attached to the Fourth Flotilla. She is one of the vessels of the 1911 programme, with a displacement of 935 tons, and is driven by oil fuel instead of coal. This gives her

increased steaming efficiency and improved boiler-room conditions, in addition to which she is able to raise steam at very short notice, and to rapidly embark fuel either at sea or in harbour under conditions which would often be prohibitive if coal were used. Her turbine engines give a speed of 32 knots, with the engines developing 23,500 I.H.P.

NEW NAVAL COLLEGE AT OSBORNE.—It is reported that the Admiralty have decided on the erection of a new Naval College at Osborne, in place of the existing bungalows, which have long been considered unsuitable residences for boys. The new college will, it is believed, be built near the site of the present bungalows.

MINELAYING SQUADRON.—It has been decided, so it is stated, that the squadron of minelaying vessels is to be re-armed and equipped with Q.F. guns and wireless apparatus, and work has already been commenced on board the "Apollo."

The vessels which constitute the squadron, *viz.*, the "Andromache," "Apollo," "Intrepid," "Iphigenia," "Latona," "Naiad," and "Thetis," were, prior to their conversion, second-class cruisers, carrying as their armament two 6-inch and six 4.7-inch Q.F. guns, with a proportion of 6-pdrs., also Q.Fs.; but when they were converted into minelayers, their armament was entirely removed in order to provide accommodation for mines and guncotton. They were thus quite defenceless against torpedo attack, an undoubted serious defect.

The vessels are now to be re-armed with four 4.7-inch guns, mounted so as to command a wide arc of fire without interfering with the handling of the submarine mine equipment; while the wireless equipment will render it possible for them to operate successfully at longer distances from their regular bases. In this connection it may be noted that the "Maidstone," the new depôt ship for submarines, is completely unarmed.

FRANCE.

The following are the principal appointments which have been made:—

Capitaines de Vaisseau—L. J. André-Fouët to "Patrie"; A. M. Lanxade to "St. Louis." *Journal Officiel de la République Française.*

Rear-Admirals Darrieus and Cannelier have taken up their appointments as Commandants du Front de Mer at Toulon and Cherbourg on the 15th and 18th November last, respectively.

The armoured cruiser "Montcalm" left the Mediterranean in the second week in December to relieve the "Dupleix," in the Far East; the "Montcalm" is a vessel of 9,517 tons, a displacement of nearly 2,000 tons more than the ship she is relieving, which is one of the smallest armoured cruisers in the French Navy.

Some acts of *sabotage* have been committed on board the new battleship "Jean Bart," fitting out at Brest. Several of her boiler tubes have been found pierced, but the strictest enquiries have failed to show who were the authors of the mischief. The tubes in question have all had to be replaced.

M. Delcassé, the Minister of Marine, has decided to set aside, and if necessary construct, certain dry docks in which ships of war will be built; one such dock is to be at Lorient and three at Brest. This scheme

has been taken up by the Minister, owing to the satisfactory results which have been achieved in England by the construction of large ships in dry docks for many years past. At Lorient the new dock is to be constructed at the Fosse aux Mâts, at a cost of two million and a half francs, of which a considerable sum will be expended in 1913. The new dock is to be completed in two and a half years, and according to present arrangements the new battleship to be commenced in the summer of 1915 is to be constructed in it. A third dock is also to be built at the same time, at a cost of some six millions.

At Cherbourg was recently launched a dock for the salvage of submarines sunk at depths of under 40 mètres (130 feet), which is the extreme limit at which divers can work under water. The dock is composed of two hulls, joined together by a metal framework, constituted by four groups of pillars, resting for support on the bottom of the hulls; on these are placed eight metal girders, in their turn supporting longitudinal beams on which work the movable pulleys and chains used in the work of raising. The hulls and the connecting framework which join them form one rigid whole, are 207 feet eight inches long, 65 feet six inches beam (exterior) and 26 feet seven inches (interior). The draft of water, including the keels, is just under six feet, and there are 12 windlasses for working the lifting chains. There is already a similar dock at Toulon.

As soon as the entry of new submarines into service will permit of it, there will be constituted a 2nd Division of the Second Flotilla, whose headquarters will be at Calais. The First Flotilla is already composed of two divisions, with the "Francisque" as divisionaire of the 1st Division, and the "Fauconneau" as divisionaire of the 2nd. The submarines of this flotilla are:—The "Archimède," "Watt," "Fructidor," "Berthelot," "Floréal," "Prairial," "Thermidor," all driven by steam.

The Second Flotilla, of which the "Escopette" is divisionaire, is composed of three submarines, the "Pluviôse," "Ventôse," and "Germinal," driven by steam, and one, the "Brumaire," which is fitted with a Diésel motor.

THE NEW DISTRIBUTION OF SUBMARINE FLOTILLAS.—The Minister of Marine has sanctioned the further distribution of submarine flotillas, which have now been made as homogeneous as possible.

1. In the Mediterranean—A 2nd Division of submarines has been added to the fleet, with Bizerta as its base, and the constitution is now as follows:—

First Flotilla—Base at Toulon: two destroyers, the "Epée," senior officer's ship of flotilla, and another, not yet told off, as divisionaires.

Eight submarines driven by steam (forming two divisions, with two vessels in reserve), *viz.*, the "Monge," "Ampère," "Guy-Lussac," "Papin," "Cugnot," "Fresnel," "Messidor," and "Giffard" (this last to join in April).

Second Flotilla—Base at Bizerta: two destroyers, the "Pique," senior officer's ship of flotilla, and another, not yet told off, as divisionaires.

Nine submarines driven by Diésel motors (forming two divisions, with three vessels in reserve), *viz.*, the "Circé," "Calypso," "Faraday," "Joule," "Bernouilli," "Coulomb," "Arago," "Curie," and "Le Verrier."

This Second Flotilla was to be attached to the fleet on the 1st November last, and on that date the torpedo-boats and defence submarines at Bizerta were placed under the same command.

As soon as the submarines of the "Brumaire" type are ready for service, they will be attached to the Second Flotilla. The "Joule" and "Faraday" left Toulon for Bizerta at the end of October.

2. In the North—Three flotillas to be attached to the Northern Cruiser Squadron will be constituted.

First Flotilla—Headquarters at Cherbourg: three destroyers (of which the "Francisque" and two others, yet to be told off, will act as divisionaires).

Ten submarines driven by steam (two or three divisions, to be settled later), *viz.*, the "Archimède," "Watt," "Fructidor," "Berthelot," "Floréal," "Prairial," "Thermidor," "Pluviôse," Ventôse," and "Germinal."

Second Flotilla—Headquarters at Calais: two destroyers (the "Escopette" and another, not yet told off, as divisionaires).

Eight submarines of the "Brumaire" type, *viz.*, the "Nivôse," "Frumaire," "Brumaire," "Volta," "Foucault," "Newton," "Montgolfier," and "Euler" (two divisions and two reserve vessels).

The reserve vessels will be stationed at Cherbourg. The divisions will take it in turn to exercise at sea. It should be noted that this Second Flotilla will only be completed during the course of the present year, as vessels are passed into service.

Third Flotilla—Headquarters at Cherbourg: two destroyers (the "Durandal" and a divisionaire not yet selected).

Five submarines with Diésel motors: the "Mariotte," "Amiral-Bourgeois," "Franklin," "Clorinde," and "Cornélie."

This Third Flotilla will only be constituted after the second is completed; while waiting for this to be carried into effect, the "Mariotte" and "Amiral-Bourgeois" will be, when commissioned, attached to the Second Flotilla.

From the 1st January of this year, the 1st Division of the First Flotilla (the "Francisque" and the submarines "Archimède," "Watt," "Fructidor," "Berthelot") will have their base at Brest, but they will later move to Cherbourg, and when that takes place the three submarines of the "Emeraude" type will move from Cherbourg to join the Brest flotilla.

The 2nd Division of the First Squadron has Cherbourg now as its base, having been constituted last November, with a destroyer and the submarines "Floréal," "Prairial," "Thermidor," and "Giffard."

The 1st Division of the Second Squadron was constituted at Calais in November last, with the destroyer "Escopette," and the submarines "Pluviôse," "Ventôse," "Germinal," and the "Brumaire."

The 2nd Division of this flotilla will be constituted at Cherbourg, with a destroyer and the submarines with Diésel motors as they become ready for service. The three steam submarines of the present 1st Division of the Second Flotilla were to join the First Flotilla on the 1st inst., and to be replaced by the Diésel motor submarines when ready.

Le Yacht and *La Vie Maritime*.

FRENCH POWDER.—In the September No. of the *United States Naval Institute Proceedings*, the following interesting remarks made on powders by M. Daniel Berthelot, the eminent French powder chemist, before the Society of Civil Engineers of France, on June 21st last, are given:

DECOMPOSITION.—The formation of the powder by the nitration of cellulose represents the chemical phenomenon of etherization, their decomposition, *i.e.*, denitration, represents the opposite phenomenon, that of saponification. These two chemical processes tend to act at the same time, and thus establish an equilibrium varying with the temperature. Saponification is favoured by the residual humidity of the powder—one to two per cent.

The slow decomposition of powder B shows itself in three phases:—

(*a*) The nitrous products formed are absorbed in the powder itself; no alteration is visible outside, and it is not dangerous.

(*b*) The critical stage in which the nitrous vapours become free and the reaction hastens. In many cases this phase terminates in the complete ruining of the powder or third phase.

(*c*) The powder becomes an inert mass, and is not in the least dangerous.

But in certain exceptional cases—heated, quick action of moisture on the nitrous vapours formed during the drying period—the heat of reaction is sufficient to cause the powder to ignite spontaneously.

These exceptional cases are almost never realized on shore; they are much more apt to occur on shipboard—overheated and damp magazines. Seamen assign to these spontaneous ignitions many accidents that have happened in all the navies of the world.

STABILIZERS.—A search for compounds for incorporation in the powder to prolong the life of powders has been made, they being mostly basic substances which are capable of neutralizing the acid products of decomposition. We have successively tried mineral compounds, such as bicarbonate of soda, organic compounds, such as camphor, urea, amyl alcohol, aniline, diphenylamine, and triphenylamine. The diphenylamine is the one that keeps best the chemical and ballistic properties of the powder.

STABILITY TEST.—The 110° C. test is most used in France. The English prefer the test in which the sample is placed in an isolated, double-lined silver heating base—called the silver test—heated in an oven to 80° C., and the time necessary to decompose the powder is measured, and in which the interior reactions of the powder raise the temperature two degrees. Recently M. Berthelot has introduced the ultra-violet test. This light is a precious agent for accelerating chemical reactions; in a few hours they produce phenomena, which left to themselves would not happen for many months and weeks. Furthermore, a quality much desired, this light, which, as everyone knows, plays the preponderant *rôle* in the chemical evolution of plants, presents the character, common to the greater part of natural agents, of being less brutal, less harmful than the usual agents of the laboratory, heat and electricity. The chemist and the physician of living beings put into play only the feeble agents, moderate variations of temperature, and weak currents of electricity. In researches with M. Gaudechon, M. Berthelot has stated that exposed to the ultra-violet rays, powders enclosed in test tubes of quartz, placed over a mercury bath, the degree of alteration of the powder and the comparative strength of stabilizers is recognized with certainty by an analysis of the gases given off.

PRECAUTIONS.—The stability studies have proved that the decomposition starts always as a weak point, such as that of a fruit pierced, which spoils,

In this weak spot, we recognize either a bit of foreign matter—often a fragment of iron—or a local alteration of organic substance, proving a fault in the raw material or in manufacture. It is then necessary to watch with the greatest care the purity of the raw material, and not to employ dirty or greasy cotton as has often been done in the past; to forbid the process, which through a false spirit of economy, has been used, that of *radoubage*—mixing old powders with new—or remixing, introducing the solvent that has evaporated. Particularly in the Navy, there will have to be established regular inspections and tests of powders in magazines on board ship and ashore.

Finally, we should pass the law projects now in discussion, which, without suppressing the powder monopoly, limits it, in permitting private concerns to manufacture for export and for the Government, which will have the good effect of competition.

FUTURE OF BALLISTIC POWDERS.—Greek fire lasted ten centuries, black powder lasted five centuries, and how long will our nitro-cellulose powder last? We are confronted with this problem, is it better to have mineral explosives stable but violent, or to have organic colloid explosives, progressive but unstable?

M. Berthelot does not believe so, and after, as it were, having felt the pulse by means of the ultra-violet rays of a great number of organic bodies, feels and asserts that there is a fundamental distinction between a straight body or structure, and in a cyclic body or in a closed chain. The first are unstable; the second are stable. It appears that these chains have a mutual leaning, and that here is found a superiority in stability likened to that which the arch in architecture offers to the straight line. The day in which we discover a nitrous or nitric ether with a closed chain, which accords to practical needs, we will have a powder both stable as the ancient mineral powders, and progressive as the modern organic powders.

But, while awaiting that day, which is perhaps not so very far distant, we agree that the formula and composition of our war powders are good; that they compare most favourably with the best of the foreign powders. When the faults in manufacture are remedied, if not entirely overcome, due to the new inspection service, they will certainly reduce, to the extent of human foresight, the risks that our gunners and seamen undergo in time of peace.

GERMANY.

APPOINTMENTS.—The following are the principal promotions and appointments which have been made:—

Rear-Admiral Trummler to command of First Squadron. Kapitäns zur See—Gädeke, Behm, Funke, to be Rear-Admirals; Moritz von Egidy to "Yorck."

Marineverordnungsblatt.

STEAM TRIALS.—The new turbine cruiser "Magdeburg" has been carrying out her steam trials at Wilhelmshaven; she is the first vessel to be fitted with the Bergmann turbines, and has been told off to act as a torpedo experimental ship. She was built at the Weser Yard, and since the successful conclusion of her trials has been taken over by the authorities.

The first turbine battleship, the "Kaiser," having successfully concluded her trials, has been attached to the newly formed 5th Division

of the High Seas Fleet. The small cruiser "Breslau" has also been attached to the fleet after successfully going through her trials.

By a Cabinet order another company has been added to the Third Seamen's Division at Lehe, and another to the Fifth Seamen-Artillery Detachment at Heligoland.

SPEED TRIALS.—The new battle-cruiser "Goeben" was at first said to have reached a maximum speed of rather over 30 knots on her trials, and she thus would have been the fastest ship in the German Navy, with the exception of the small cruiser "Breslau," and the destroyers. But it has since been stated that she really only made 28.6 knots, and that as a steamer she is behind the "Von der Tann," "Moltke," and the "Blücher," which latter ship, in spite of her comparatively-speaking weak armament, is considered one of the most successful ships built for the German Navy. The "Moltke" is said to have attained a maximum speed of 29.7 knots.

The "Von der Tann" made a maximum of 28.1, and the destroyer "G 194" made 36 knots on her trials. The German battle-cruisers were all built by the firm of Blohm & Voss, of Hamburg, and are all fitted with Parsons' turbines. The small cruiser "Breslau" has turbines of the A.E.G. type, and "G 194" has turbines of the Germania type.

SIZE OF GUNS.—The *Yacht* holds that German professional opinion has changed in favour of guns of large calibre. Even as late as 1901 the maximum calibre of the guns of battleships was the 10-inch, and it was only about that date that the 11-inch gun was mounted in the ships of the "Braunschweig" class. 11-inch was the calibre of the guns mounted in the "Nassau," the first German ship of the "Dreadnought" class, and her three sisters; the 12-inch gun being first mounted in the "Helgoland" and her sisters, which followed the Nassaus.

PRIZE FIRING, 1911-12.—The battleship "Nassau" heads the list, and she is followed by the "Lothringen," one of the pre-"Dreadnought" ships belonging to the Second Squadron, the other two vessels of the four prize-winning ships are the battle-cruiser "Moltke" and the small cruiser "Dresden," which both belong to the First Cruiser Squadron.

BRITISH AND GERMAN GUNS.—The Italian Minister of Marine has laid an interesting report before the Italian Parliament with reference to the armaments of the principal fleets. According to this statement the British, Italian and Japanese Navies are the only ones to mount wire-wound guns; the probable life of the Italian and Japanese 12-inch guns is given at 80 rounds, whereas the English gun is credited with being good for only 60 rounds. On the other hand, the Austrian and German guns are given from 200 to 220 rounds, and the American 14-inch gun has a probable life of 150 rounds. The particulars with reference to British and German guns are as follows:—

	British.			German.		
Calibre in inches	12	13·5 ...		12	14	15
Length in calibres	50	45 ...		45	50	50
Weight in tons	69	80 ...		53	83	102
Weight of projectile in lbs. ...	850	1,240 ...		850	1,360	1,650
Initial velocity, f.s.	2,950	2,800 ...		3,000	3,000	3,000
Energy at muzzle in metric tons ...	16,540	22,150 ...		17,520	27,650	33,910
Energy per kilogram in kilometres	240	277 ...		330	330	330
Probable life	60	60 ...		200	200	200

Marine Rundschau and other sources.

UNITED STATES.

PROGRAMME OF NAVAL INCREASE.—The General Board of the Navy, under the Presidency of Admiral Dewey, has recommended the authorization by Congress in 1913 of four battleships of the "Pennsylvania" type, two swift and powerful battle-cruisers nearly as large, and a proportionate number of torpedo craft and auxiliaries. As in previous years the recommendations of the General Board are based upon the conviction that a fleet of 48 battleships with cruisers and auxiliaries and torpedo-craft in proportion is required for the adequate defence of the coasts, commerce, and dependencies of the United States.

The General Board believes that the fleet requires five "Pennsylvanias." This is the largest type of battleship ever projected in the United States, a vessel 600 feet long, 98 feet beam, and having a displacement of more than 31,000 tons. The desired armament is twelve 14-inch guns, mounted three in a turret, twenty-two 5-inch guns, and two submerged 21-inch torpedo-tubes. Installation for oil will be used, and the speed be upward of 22 knots.

The Board is of the opinion that two of the battleship-cruisers should be built each year until there are at least eight. Eight destroyers of the same design as those now under construction have been recommended. These vessels have a length of 288 feet, a beam of 26 feet, and a displacement of 742 tons. Their contract speed is to be 30 knots. According to the report of the Board, the shortage in destroyers on the basis of the 33 battleships now in the Navy is 74.

Two fuel ships, probably both oil carriers, will be on the tentative programme. Members of the Board find that the Navy is at present ten fuel ships short of its needs, and that it is absolutely necessary if the efficiency is to be upheld that two be built this year.

A hospital ship, repair ship, one or two tenders for submarines and destroyers, supply and ammunition ships are thoroughly considered in the report, which also defines the increase of the British, German and Japanese Navies as by arithmetical progression. By statistics it demonstrates just how far behind each of the nations mentioned the United States Navy is.

OFFICIAL NOMENCLATURE OF DECKS IN UNITED STATES NAVY.—A General Order of November 14th, 1912, prescribes the nomenclature of decks of vessels of the United States Navy, which is as follows:—"The highest deck extending from stem to stern is to be called the 'main deck.' A partial deck above the main deck at the bow shall be called the 'forecastle deck;' at the stern, 'poop deck;' amidships, 'upper deck.' The name 'upper deck,' instead of 'forecastle deck' or 'poop deck,' shall be applied to a partial deck extending from the waist to either bow or stern. A partial deck above the main, upper, forecastle or poop deck, and not extending to the side of the ship, shall be called the 'superstructure deck.' A complete deck below the main deck shall be called the 'second deck.' Where there are two or more complete decks below the main deck they shall be called the 'second deck,' 'third deck,' 'fourth deck,' etc. A partial deck above the lowest complete deck and below the main deck shall be called the 'half deck.' A partial deck below the lowest complete deck shall be called the 'platform deck.' Where there are two or more partial decks below the lowest complete deck the one immediately below the lowest complete deck shall be called the 'first platform,' the next shall be called the 'second platform,' and so on. Decks which for protective purposes are fitted with plating of extra

strength and thickness shall be further defined, for technical purposes, as 'protective' and 'splinter,' in addition to their regular names. Where there is only one such deck it shall be defined as 'protective,' and where there are two, that having the thicker plating shall be defined as 'protective' and that having the thinner plating shall be defined as 'splinter,' in addition to the regular names. Where a protective deck is stepped a complete deck height the respective portions shall be distinguished by means of the terms 'middle protective section,' and 'forward (or after) protection section,' in addition to the regular names. Where a splinter deck is stepped a complete deck height the respective portions shall be similarly distinguished. Where a portion of the protective or splinter deck is sloped, the sloping portion shall be defined as the 'inclined protective deck,' or 'inclined splinter deck.'"

THE USE OF OIL AS FUEL IN UNITED STATES WARSHIPS.—According to the Engineer-in-Chief of the United States Navy, the most radical development in naval engineering since the advent of the turbine is the exclusive burning of oil by the United States battleships "Nevada" and "Oklahoma." This replacement of coal has permitted in the case of those ships a reduction in boiler weights, which, in turn, has made possible the use of heavier armour than has hitherto been employed. Doubt as to the supply of oil being sufficient for such purposes has frequently marked discussions of the possibilities of oil as fuel for warships, but this uncertainty as to supply has been so well removed by recent discoveries that the Engineer-in-Chief, in a paper on the use of oils for naval purposes, which is published in the November *Journal of the American Society of Naval Engineers*, predicts the rapid replacement of coal by oil. "We are now assured as regards the supply," he says, "that there is sufficient oil on the public lands of California alone to supply all probable naval demands for one hundred years should oil be burned to the exclusion of coal, and, of course, there is considerable oil in other portions of United States territory." Going further still, the Engineer-in-Chief shows that so far as the transport of fuel is concerned our lack of auxiliaries is not so marked in the case of oil fuel as in the use of coal. "The question as to the distribution of oil among the ports from which fuel might be required by our vessels in time of war is one that is well within our power to solve, as from its nature the oil can be transported and stored more easily than can coal. Indeed, for the transport of oil in time of war we are already better provided than for coal, there being a large number of tank steamers flying the American flag. Oil is, therefore, certain rapidly to replace coal as a fuel for naval purposes." This replacement is made probable by the recent remarkable development of heavy oil engines of the Diésel type. Since 1907 all destroyers contracted for, of which there are 29, burn oil exclusively, and the battleships "Delaware," "North Dakota," "Florida," "Utah," "Wyoming," "Arkansas," "Texas," and "New York," contracted for during this period, are fitted to burn oil as auxiliary to coal, each of these vessels carrying about 400 tons of the liquid fuel, to be burned at full power after the coal fire becomes dirty, or when it becomes difficult to trim coal from the bunkers into the firerooms. In the case of these battleships, the advantages of the oil have so appealed to the *personnel* that oil alone is burnt to a great extent in port and to some extent while cruising, although the installation of the oil-burning equipment did not contemplate these uses.

Army and Navy Journal.

NAVAL ESTIMATES FOR 1913.—The Naval Estimates for the current year amount to 123,151,538.76 dollars (£25,656,570), the principal items being as follows:—

	$
Pay of the Navy	37,280,971.25
Gunnery Exercises	167,000.00
Steaming Exercises	15,000.00
Aviation Experiments	10,000.00
Outfits on First Enlistment	900,000.00
Maintenance of Naval Auxiliaries	768,373.00
Naval Training Station, California	70,000.00
Naval Training Station, Rhode Island	85,000.00
Naval Training Station, Great Lakes	106,500.00
Naval War College, Rhode Island	29,850.00
Ordnance and Ordnance Stores	6,550,000.00
Naval Gun Factory, Washington, D.C.	225,000.00
Ammunition for ships of the Navy	3,850,000.00
Torpedoes and Appliances	650,000.00
Mines and Mine Appliances	100,000.00
Equipment of Vessels	3,843,300.00
Coal and Transportation	4,000,000.00
Ocean and Lake Surveys	75,000.00
Maintenance, Bureau of Yards and Docks	1,500,000.00
Navy Yard, Portsmouth, N.H.	44,000.00
Navy Yard, Boston	240,000.00
Navy Yard, New York	125,000.00
Navy Yard, Philadelphia	130,000.00
Navy Yard, Washington, D.C.	200,000.00
Navy Yard, Norfolk, V.A.	145,000.00
Navy Yard, Charleston, S.C.	39,000.00
Navy Yard, Key West	35,000.00
Navy Yard, Mare Island, Cal.	80,000.00
Navy Yard, Puget Sound, Wash.	227,000.00
Navy Yard, Pearl Harbour, Hawaii	1,742,000.00
Repairs and Preservation of Navy Yards, etc.	800,000.00
Buildings and Grounds, Naval Academy	85,000.00
Naval Torpedo Station, Newport, R.I.	135,000.00
Provisions, Navy	8,542,328.25
Construction and Repair of Vessels	8,479,144.00
Steam Machinery	6,256,000.00
Marine Corps, exclusive of public works	7,425,978.78
Increase of the Navy, Construction and Machinery (authorized)	4,808,705.00
Increase of the Navy, Armour and Armament (authorized)	5,000,000.00
Increase of the Navy, Equipment (authorized)	100,000.00
Increase of the Navy, Construction and Machinery (New Programme)	5,037,500.00
Increase of the Navy, Armour and Armament (New Programme)	2,265,200.00
Increase of the Navy, Equipment (New Programme)	255,000.00
Increase of the Navy, Torpedo-boats	921,647.00

NOTE.—The items for Navy increase, new programme, for armour, armament, construction and machinery, are submitted on account of

three battleships in the Navy Department's proposed building programme for 1914 (amount required for first year's work).

THE SECRETARY OF THE NAVY'S REPORT.—In his annual report, Mr. Meyer, the Secretary of the Navy, touches, among other subjects, on the prevention of war by arbitration and the influence on fleet power of the Panama Canal. As to the former the report says:—

"That international efforts toward peace have accomplished nothing as to the limitation of armament needs no argument. If an efficient fleet of adequate size is maintained the country will be safe from attack and free to work out its destiny in peace and without hindrance. The recommendation for a continuing policy which will give the fleet desired is made with due regard for the almost world-wide movement for the settlement of international disputes by arbitration, in which movement this country has taken a foremost part. History of all times, including the present, shows the futility and danger of trusting to the goodwill and fair dealing of nations, or even for the most solemnly binding treaties for the protection of a nation's sovereign rights and interests, and, without doubt, the time is remote when a comparatively unarmed and helpless nation may be reasonably safe from attack by ambitious, well-armed Powers, especially in a commercial age such as the present. The economical system of a great commercial nation is so delicately balanced that even a threat of war is very disturbing and harmful, while a war with any other great Power would cause incalculable damage. To avoid war and insure peace the country must be prepared for war. No person of intelligence who has studied international policies can be blind to the fact that possession of great wealth, resources and population does not carry with it immunity from attack should a nation's interests clash with those of another better prepared."

After referring to the erroneous statement that "the Canal will double the fleet," Mr. Meyer says: "It will increase the efficiency of the fleet somewhat, because if the fleet is on this side it will reduce the time necessary to bring it round to the Pacific coast, but it does not increase the number of ships. The Canal does double the power of the fleet in some respects when it permits of transferring the fleet from one side to the other, but this is a condition which has been fully considered whenever the subject of present and future naval strength has been under discussion by the naval experts. With an immense coast line, and with the whole of South and Central America to separate the East from the West coasts, this country would otherwise need double the fleet of a country whose coast line is continuous. In times of peace it is pointed out that there will be no more wars, but history shows that wars come at times with little or no warning. There is no time left to build battleships, and it is impossible to buy them. Congress should provide the auxiliaries, destroyers, etc., that go with the battleship fleet, but when war comes the auxiliaries will not go out and sink the battleship fleets. Only battleships can do this work."

Mr. Meyer does not take decided ground in criticism of the value of the battle-cruiser, which figures among the recommendations of the General Board of the Navy for the building programme, but contents himself with a general approval of the battleship as the best capital ship to develop at this stage of our naval progress. On this point he

writes: "That if Congress authorizes only two capital ships ('Dreadnoughts' and battle-cruisers) every year the United States will drop from second to fourth place among the naval Powers of the world." A total of 41 battleships is the least, the report says, that will place this country on a safe basis of defence. While recognizing the value of battle-cruisers and smaller craft of all kinds, the Secretary says it is wiser to provide for battleships than sacrifice battleship strength for vessels of less military value. Three battleships are included in the Estimates for this year, but the deficiencies in other types should be met in accordance with the recommendations of the General Board . . . . . The Board recommends the following increase of the Navy in the present session of Congress:—Four battleships, two battle-cruisers, 16 destroyers, one destroyer tender, one ammunition ship, six submarines, one submarine tender, one supply ship, two gunboats, two transports, one dry dock and one submarine testing dock. The four battleships will only replace that number of vessels 20 years old.

Mr. Meyer also draws attention again in his report to the advisability of creating again the ranks of Admiral and Vice-Admiral in the United States Navy. "When it is realized that 19 of the navies of the world include at least Vice-Admirals—nine of them Admirals—and Japan, Germany and England Admirals of the Fleet in addition, it is felt that this matter should be corrected in our Service by appropriate legislation."

"In any combined operations or international functions where naval forces or officers are present," the Secretary proceeds to say, "the United States would take the lowest place in rank. We have more vessels in commission than most of the nations giving higher rank to their officers, yet when our fleets enter foreign waters our naval officers are compelled to yield precedence to officers of smaller nations. This is not an indignity to the man so much as to the United States. Nineteen nations have naval officers above the rank of Rear-Admiral. The report recommends legislation for increased flag rank similar to the provision contained in the last Appropriation Bill (which was struck out there as new legislation), but that it be provided for in a Bill separate from the Appropriation Bill."

Army and Navy Journal.

MILITARY NOTES.

BRITISH EMPIRE.

The following are the principal appointments, promotions, and retirements for December, 1912:—

APPOINTMENTS: *Home.*—Major-General Sir Archibald J. Murray, K.C.B., C.V.O., D.S.O., to be Inspector of Infantry, vice Major-General Sir C. Fergusson, Bart., C.B., M.V.O., D.S.O., resigned, December 9th; *Royal Artillery*: Major-General Sir G. A. French, K.C.M.G., to be Colonel Commandant, vice Lieut.-General and Honorary General Sir C. L. D'Aguilar, G.C.B., deceased, November 3rd; Major-General Arthur Gethin Creagh, C.B., to be Colonel Commandant, vice Major-General F. T. Lloyd, C.B., deceased, November 19th.

Indian Army.—Field-Marshal H.R.H. the Duke of Connaught and Strathearn, K.G., K.T., K.P., G.C.B., G.C.S.I., G.C.M.G., G.C.I.E.,

G.C.V.O., to be Colonel-in-Chief of the Supply and Transport Corps (December 10th).

PROMOTIONS.—Colonel (temporary Brigadier-General) Granville G. A. Egerton, C.B., commanding the Infantry Brigade, Malta, to be Major-General, vice A. G. Creagh, C.B., retired, December 10th.

Indian Army.—Major-General Sir Malcolm H. S. Grover, K.C.I.E., C.B., commanding 4th (Quetta) Division, to be Lieutenant-General, September 21st; Colonel (temporary Brigadier-General) Charles F. G. Young, commanding Jhansi Brigade, to be Major-General, September 21st.

RETIREMENT.—Major-General Arthur G. Creagh, C.B., is placed on retired pay, December 10th.

South Africa.

REDUCTION OF GARRISON.—It was officially announced that the British garrison in South Africa would be reduced by two regiments of cavalry, one brigade of horse artillery, one brigade of field artillery, one field troop R.E., and one battalion of infantry. The garrison will now amount to 6,500-7,000 men.

In a Special Army Order of December 7th, 1912, it was stated that the following units in South Africa would be relieved in 1912-13:—12th Lancers, 15th Hussars, Royal Horse Artillery 1st Brigade, Royal Field Artillery 21st Brigade, and Royal Engineers 2nd Field Troop.

AUSTRIA-HUNGARY.

It is reported in the Press that the Triple Alliance has been renewed without alteration for a term of 12 years. The Alliance was first formed in 1882, and was renewed in 1887, 1891 and 1902.

A son has been born to the Archduke Joseph, nephew and next legal successor to the Archduke Franz Ferdinand; the child stands, therefore, in the direct line of succession to the throne of Austria-Hungary.

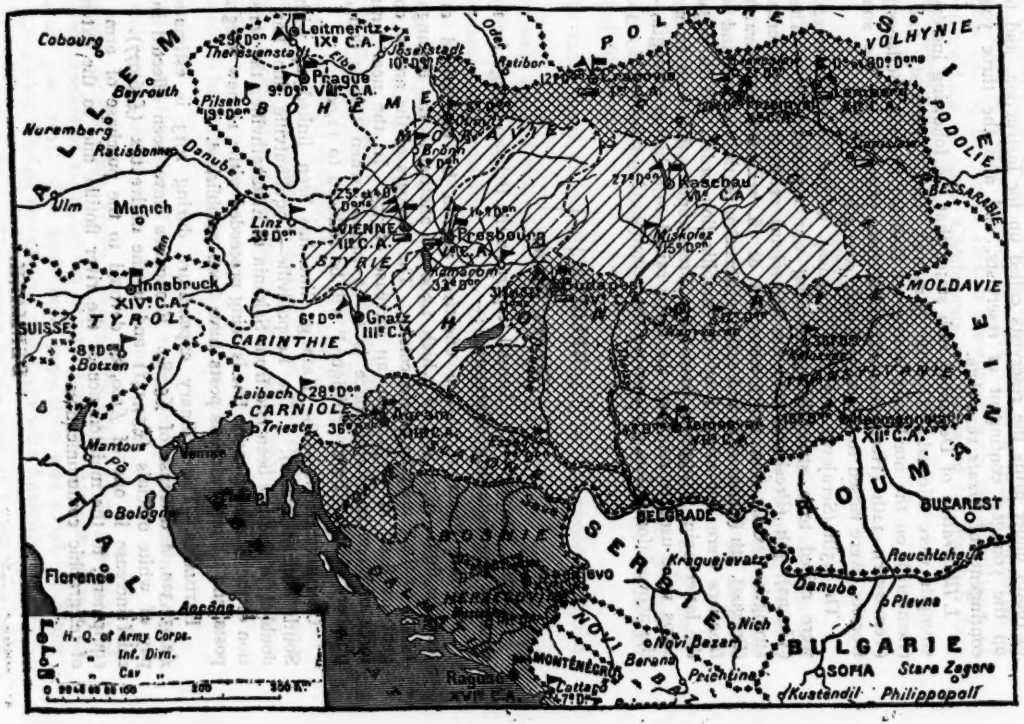
The Emperor has given official sanction to the scheme for the formation of the *Honved* Artillery. Two *Honved* field gun regiments (numbered 1 and 8), each of five batteries, and eight *Honved* field gun divisions, each of two batteries, will accordingly be formed on January 1st, 1913.

AUSTRIAN MILITARY PREPARATIONS.—An article by Commandant de Thomasson in *Questions Diplomatiques et Coloniales*, January 1st, 1913, states that on that date the XVth (Serajevo) and XVIth (Ragusa) Army Corps had together been increased from 64 to 80 battalions, while ten additional battalions had reached the Dalmatian ports, where transports were assembled. Only a portion of the XVth Corps could, he considers, have been employed, in case of war, against the Servians; the rest were to remain as occupation troops in Bosnia, where the inhabitants are less tractable than in Herzegovina. The XVIth Corps, stationed at Ragusa, Mostar, and Cattaro, was to be given, he says, the twofold mission of overawing the population of Herzegovina and, if necessary, of operating against the Montenegrins.

On the other frontiers, writes Commandant de Thomasson, the preparations had not advanced so far, nevertheless they were serious; in the three Southern Corps (Agram, Temesvar and Hermannstadt), in the four Galician, and in one Bohemian Army Corps, companies of infantry had

THE AUSTRO-HUNGARIAN MOBILIZATION ON THE RUSSIAN, SERVIAN, AND MONTENEGRIN FRONTIERS, ACCORDING TO THE MOST RECENT REPORTS.

[Reduced from *L'Illustration* of December 28th, 912



been raised to 150 men. Moreover, the Danube Flotilla of Monitors had been armed and had carried out evolutions near Belgrade. The Military Service Law had, he states, given the Austrian Government facilities for accomplishing this without actually mobilizing, as it enabled the authorities to retain under arms the reservists called up for instruction, and to call up the youngest contingent of reservists, and also the three youngest contingents of *Ersatz* reservists.

L'Illustration of December 28th states that the following increases of strength were effected:—The 1st (Cracow), 10th (Przemysl), and 11th (Lemberg), on the north-east frontier of Galicia; the 4th (Budapest), 7th (Temesvar), 12th (Hermannstadt), and 13th (Agram), on the southern frontier, were raised to "increased war strength."

The 15th (Serajevo) and 16th (Ragusa), in Bosnia and Herzegovina, were raised to a strength approaching war establishment. The 2nd (Vienna), 5th (Presburg) and 6th (Kaschau) received some increase of strength. Only four army corps out of 16, *viz.*, the 3rd (Gratz), 8th (Prague), 9th (Leitmeritz) and 14th (Innsbruck), on the German and Italian frontiers were not affected by the mobilization order. (With regard to the latter point it appears from other Press reports that men from these corps were used to reinforce the corps raised to a higher strength.—Ed.) the above information is shown on the accompanying map (page 123).

BELGIUM.

Belgian Congo.

ANNUAL REPORT.—The Annual Report on the Belgian Congo for 1911-12 contains the following information:—

"FORCE PUBLIQUE."—The effectives are to be maintained at the previous figure of 17,833, of which 1,900 are allotted to the Katanga and 15,933 to the remainder of the colony. The numbers of the annual contingent are fixed at 3,750 men, an increase of 375. In the near future a force of 6,000 territorial police is to be raised; when this is done, the numbers of the "Force Publique" will be reduced to 12,000.

COMMUNICATIONS.—The Katanga line has been linked up with the South African system. The Leopoldville—Coquilhatville line has been doubled; a line has been laid from Sakania to Elizabethville; the construction of the Boma—Banana line is being proceeded with; 11 new telegraphic posts and 11 new wireless posts have been established.

ESTIMATES.—The ordinary expenditure during 1913 is estimated at £2,039,320, a decrease of £5,289. Economies have been effected in the pay of white officials (£54,241) and in the native tax (£56,977). The chief increase is one of £100,789 devoted to the purchase of arms and equipment, to the maintenance of the river flotilla and to the extension of telegraphic communication.

DENMARK.

THE BUDGET.—The estimates for the financial year 1913-14 have been presented to the Folkething. The deficit amounts to 8,000,000 kroner (£444,444).

The expenditure amounts to £5,761,111, an increase of £111,111. Of this £1,088,000 is for the Army and £541,666 to the Navy.

The former sum shows a decrease of £10,000. £166,665 is for extraordinary expenditure and is devoted to the sea forts of Copenhagen (chiefly to the purchase of artillery) and other coast defences. The Army Estimates also include £1,666 for training 20 men per battalion in the use of the Danish machine-gun (*Rekylgevaar*) which is to be adopted by the infantry, £555 for carrier pigeons and £21,111 for a trial mobilization of all troops east of the Great Belt in accordance with the stipulations of the Defence Law of 1909. Combatants will be called out for two days and non-combatants for one day.

GERMANY.

German Colonies.

COLONIAL ESTIMATES, 1913.—With the exception of New Guinea and Kiao-chao, for whose development increased sums are required, the cost of the civil administration of the Colonies will be borne by the Colonies themselves, that of the protectorate troops being a charge on the Imperial Budget.

The total increase of the Colonial revenues amounts to £73,000, which is lower than usual, and is accounted for by the great decrease in the revenue of German South-West Africa, due chiefly to the diminished output of diamonds.

The main items of interest in the Budgets for the various Colonies are:—

German East Africa.—Continuation of the northern and central railways.

Cameroons.—Completion of the first section of the central railway as far as Bidjoki, probably by the 1st October, 1913.

Togo.—Improvements in communications (new roads and bridges), water supply and drainage.

German South-West Africa.—Construction of Government offices and hospitals, enlargement of horse-breeding establishments, and provision of wireless telegraph equipment for the troops.

German New Guinea.—Construction of Government buildings and hospitals, agricultural improvements, new roads, lighting and protection of coast.

Samoa.—Increase in police force to cope with the influx of Chinese labour.

Kiao-chao.—Provision of articles of equipment for the marine detachment and replenishment of the stock of ammunition.

GERMAN SOUTH-WEST AFRICA: POPULATION.—The white population of the Colony amounted to 14,816 on the 1st January, 1912, an increase of 854 in the year 1911. The adult male population was 9,046, of whom nearly 3,000 were officials or military, and 1,350 were foreigners.

TOGO: LANDING PIER.—The repairs to the pier at Lome have been completed and the pier was open for traffic on 1st November.

CAMEROONS: TRANSFER OF FRENCH TERRITORY.—The northern portion of the New Cameroons was formally handed over by the French on the 1st October.

JAPAN.

THE TOYAMA SCHOOL.—An Army Order dated 27th August, 1912, provides for the establishment of a new infantry school of musketry, tactics and inter-communication. These subjects were taught formerly at the Toyama School; but the subjects of instruction at this establishment are now confined to gymnastics, bayonet fighting and military music.

CONSCRIPTION.—The *Osaka Mainichi*, dated 18th October, 1912, gives the number of conscripts who failed to appear during the last three years as:—1910—7,982; 1911—7,854; 1912—7,754.

The number for any year includes, however, all those who have failed to present themselves in preceding years, and whose names have not been removed from the register. The number of new recruits who were absent in a certain regimental district is given by another newspaper, the *Gifu*, as 16. There are 74 regimental districts; and if 16 is an average number, the total number of absentees in this year's batch of conscripts is 1,184. The total number of men who came of age is not exactly known, but to judge from the 1908 census returns, it cannot be less than 350,000. The percentage of deserters is therefore under .3.

Instructions have been given to discontinue the celebrations that it has been the custom to hold in barracks to bid farewell to soldiers who are joining or leaving the colours. It was considered that these ceremonies involved unnecessary expenditure, and emphasized unpleasantly the distinction between the various social grades of recruits. Those whose parents could afford to do so, hired a band, flags, etc., to conduct them to or from barracks, and this was much felt by other recruits whose relations were too poor to afford the necessary outlay.

JAPANESE DISCIPLINE.—A British officer, an eye-witness, relates the following incident that occurred at a Japanese practice camp. "The breech of a gun was blown out on the 3rd September, one gunner was killed on the spot, and six non-commissioned officers and men as well as the section commander were wounded. *The wounded men at once returned to their places at the gun and endeavoured to go on with their duties as if nothing had happened.*"

GENERAL NOGI'S SUICIDE.—The statement made by General Okazawa, Chief Aide-de-Camp to the late Emperor, and appearing in the Japanese Press, is the latest explanation of the motives which induced General Nogi to commit suicide. According to General Okazawa, Nogi, upon his triumphant return to Tokyo from Manchuria after the conclusion of peace with Russia, was received in private audience by His late Majesty. The General, on that occasion, after making a full report to the Throne as to the battles in Manchuria, stated that he had determined to do away with himself in atonement for the loss at Port Arthur of so many loyal officers and men. The Emperor listened to the General's words in perfect silence, but His Majesty's attitude suggested sympathy and appreciation. The General was about to withdraw from the Imperial presence when His Majesty suddenly called him back, and said that he sympathized with him, but that now was not the time to die. His Majesty hoped that if the General persevered in his determination, it would be after His Majesty's own death.

PERSIA.

GUN RUNNING.—In the House of Lords on December 11th, Viscount Morley stated that an arrangement had been made in December, 1911, with the Sultan of Muscat, by which all arms seized are bonded. To this arrangement, however, the French Government had taken exception, contending that the arms were not merely bonded but confiscated.

INDIAN TROOPS IN PERSIA.—On the same occasion Lord Morley stated that in all, there were 1,286 officers and men of the Indian Army in Southern Persia, the number at the three principal stations being: Shiraz, 12 officers and 491 other ranks; Bushire, five officers and 420 other ranks; Jask, five officers and 236 other ranks. These forces had been sent originally not to keep order, but to reinforce the ordinary Consular Guard.

Regarding the withdrawal of the cavalry from Ispahan to Shiraz, the Marquis of Crewe stated that the time for their relief was due, but, in view of the unsettled state of affairs around Ispahan, they had been removed to Shiraz, where they would no doubt be replaced by reliefs from India, who would form a Consular Guard at Ispahan. Formerly the Guard at Shiraz was composed of 150 to 200 Sepoys, but cavalry had been sent owing to the disturbed condition of the roads, and in larger numbers owing to the possibility of danger to British interests. The force, however, was only intended as a Consular Guard; had it been despatched for the purpose of keeping order, some 5,000 or 6,000 men would have been sent.

MURDER OF A BRITISH OFFICER.—We deeply regret to record the death of Captain A. B. Eckford, 39th Central India Horse, in an attack by brigands near the Sinihsafid Pass. The following details, furnished by Captain Kettlewell, were given in a code telegram by H.M. Consul at Shiraz:—

"Party consisted of Kettlewell, Eckford, one native officer, 26 sowars, 17 followers, and 17 baggage mules. They started from Khanehzinian at 7 a.m., 11th December, half an hour after a party of about 150 Persian soldiers, who were marching down road independently. Twelve men were told off as baggage guards, remainder with officers as advance guard. At the bridge over Kazaagach river Persian officer of the Gendarmerie, with two mounted gendarmes who had accompanied Kettlewell to the river, galloped on ahead to inspect Gendarmerie post at Burjitinuri, on the top of the Sinihsafid Pass. Kettlewell also sent on ahead native officer and two sowars to prepare quarters at Dastarjin. Scouts were also posted on wooded hills on the left flank. After short halt party proceeded. Road here runs through jungle for about one and a quarter miles. Two officers, accompanied by six or seven sowars, had passed beyond jungle, and, just as leading mules were appearing from jungle hot fire was opened by a party from hills on left. Advanced, galloped ahead, got under cover, dismounted, and started to climb hill. It was difficult to discover enemy through thick jungle, but shots were exchanged, and it is now that Eckford was shot through heart. A few minutes after, Kettlewell saw from crest of ridge 150 to 200 men rush out from bottom of ravine below towards river bank. His men fired on them, but they quickly disappeared into jungle. Meanwhile sowars of baggage guard had crossed to north bank of river and taken up position in low hills. They report that smaller body of robbers joined attack also from the north. Kettlewell now collected men with him, descended hills, and

crossed river bed, taking Eckford's body with him. They joined other party, and native officer and two sowars who had gone ahead also rejoined party here. Meanwhile robbers appear to have made off over hills northward with the booty. Whole party then returned to Khanehzinian, moving by north bank of river. During this movement some 15 to 20 horsemen were seen on hills to north and shots exchanged. Kettlewell states he saw no caravan litter at caravanserai at Khanehzinian or on road. Small party of Persians, with three or four mules, who left Serai after sowars had started, were robbed and their mules taken. They returned to Serai on foot, where Kettlewell saw them, but he had not seen them on road.

"Kettlewell also states that, beyond the firing, no attempt was made to attack his small party. Robbers were apparently only out for plunder, and cleared off at once when they had seized mules. As to the Gendarmerie, it would appear that Persian officer when he reached Burjitinuri brought his men back along crest of hills, and it was there that they were wounded. Kettlewell only saw them in the distance moving along hills to south when he was returning towards Khanehzinian."

RUSSIA.

NEW AMBULANCE CART.—Army Order 454/1912 introduces a new pattern of two-wheeled cart, with stretchers, capable of carrying two lying down cases. The weight of the vehicle is 5 cwt. One-horse draught is provided, and the driver is expected to lead the horse. The old ambulance carried only one lying down case, and was driven from the box.

MACHINE-GUN DETACHMENTS.—Army Order 1386/1912 introduces the three-line revolver and cavalry sword (without superimposed bayonet scabbard) for combatant non-commissioned officers and men of cavalry and Cossack machine-gun detachments.

OFFICERS' FIELD SERVICE BELTS, ETC.—Army Order 458/1912 authorizes a new field service sword-belt, etc., for officers of all arms, consisting of waist belt, sling, revolver holster, field glass case, and haversack, all made of brown leather.

COSSACK SERVICE.—Army Order 419/1912 introduces additional training for certain grades of Cossacks of the Amur and Ussuri Voisko. Cossacks in the "front" category, who do not otherwise serve, will attend camp for four weeks in their third year in the category. In addition, such Trans-Baikal Cossacks will attend camp for three months in their first year in the "front" category. Cossacks of all the above mentioned Voisko will attend camp for four weeks in their second year in the second category.

REORGANIZATION OF THE ENGINEER DEPARTMENT.—Army Order 423/1912 promulgates regulations for the formation of a new "Barrack Directorate," and augments the duties of the "District Inspectors of Engineer Troops" appointed in each military district in 1910. The new directorate absorbs the "Barrack Construction Committee," and will undertake all that concerns the construction and maintenance of barracks, drill grounds, ranges, etc., not connected with defence. The directorate will comprise four branches and the Barrack Construction Committee. The "District Inspector of Engineer Troops," a lieutenant-general with a staff of seven engineer officers, will supervise the field engineer training of troops of all arms, the care of all engineer stores, and will be responsible for all construction work in fortress areas, and for the efficiency of the fortifications. The

Inspector is directly responsible to the Commander of the Military District, but will report also to the Engineer Department of the War Office on technical matters.

REMOUNT DEPARTMENT.—Army Order 377/1912 augments the duties of the Remount Department. The provision of remounts for the artillery is transferred to it from the Artillery Department and the General Staff, and the Turkestan Remount Branch is made subordinate to the Remount Department. This department is also charged with the supervision of the drill training and inspection of the Depôt Cavalry units. The Chief of the Remount Department will be a general, or lieutenant-general, directly responsible to the Minister of War.

UNITED STATES.

CENTENARY CELEBRATION.—Arrangements have been made at Washington for a national celebration of the centenary of Anglo-American peace. It is proposed to have a week's festivities commencing on February 13th, 1913, and every State in the Union will be invited to participate. Great Britain is to be asked to send official representatives.

ABSENCE FROM DUTY: *Extracts from Army General Orders.*—No officer or enlisted man absent from duty on account of disease resulting from the intemperate use of drugs or alcoholic liquors, or from venereal disease, is to receive pay during the period of such absence.

From 15th December, 1912, all officers below the rank of major, with certain stated exceptions, who have not been *actually present for duty* with their units for at least two out of the preceding six years, are to return to duty with their regiments. Superior officers, who fail to see that this rule is enforced, will themselves forfeit all pay and allowances during any period that an officer remains detached in contravention of this order.

REMOUNTS.—According to the Year Book of the Department of Agriculture, the following are the numbers of horses and mules in the United States:—

Horses, 20,509,000; average price, £22. Mules, 4,362,000; average price, £25.

Kansas is the only State which shows a loss in horses during the preceding 12 months.

PREVENTION OF TYPHOID FEVER.—In the annual report of the Surgeon-General of the Army Medical Corps, it is stated that the result of typhoid prophylaxis having been made compulsory is most satisfactory. During the first six months of this year only seven cases were reported, with one death.

NEW 14-INCH GUN FOR COAST DEFENCE.—The official testing of the new 14-inch gun is reported to be satisfactory. It is an improvement on the 12-inch gun, and will be mounted on the coast defences of the Panama Canal. The shell weighs 1,660 lbs., the charge is 340 lbs. of smokeless powder, and it is said to be capable of penetrating any armour yet manufactured at 12,000 yards. In the test, six shots were fired by a crew of 16 men in three minutes 45 seconds.

AERONAUTICAL NOTES.

GREAT BRITAIN.

ROYAL FLYING CORPS.—The organization of the Naval Wing, Royal Flying Corps is as follows:—

Admiralty.—Air Department: Director, Captain M. F. Sueter. Assistants to Director: Commander O. Schwann and Lieutenant C. J. L'Estrange-Malone. Engineer-Inspector: Engineer-Lieutenant G. W. S. Aldwell.

Schools of Instruction.—Central Flying School: Upavon, Salisbury Plain. Commandant: Captain G. M. Paine, M.V.O., R.N.

Naval Wing: *Aeroplane Section*: Naval Flying School, Eastchurch. Officer Commanding: Commander C. R. Samson. *Airship Section*: Arnold House, Farnborough. Officer Commanding: Commander E. D. Masterman.

Naval Air Stations.—Isle of Grain Station. Flight Commander: Lieutenant J. W. Seddon.

Note.—This station, the first established, was constituted 31st December, 1912. Other stations are said to be contemplated at Cleethorpes, Rosyth and Filey.

The officers of the Royal Flying Corps, both of the Naval and the Military Wings and of the Reserve, are now shown in the Navy List, the first appearance having been in the December issue.

During the year 1912, 22 officers, petty officers and men of the Royal Navy and Royal Marines have been granted pilot certificates by the Royal Aero Club.

ADMIRALTY ORDERS FROM ABROAD.—According to accounts that have appeared in the Press, the Admiralty has ordered one dirigible each from both France and Germany.

France: from the Astra Aeronautical Company, of Billancourt, near Paris. It is stated that the airship, which was laid down in August last, is now nearing completion. According to the *Times*, the Astra-Torrès airship (so-called from the designer Leonardo Torrès Quevedo, a Spanish engineer) is unlike other existing airships, in that the envelope consists of three lobes, joined together and running the whole length of the airship. Where the lobes meet there is a cable extending from one end of the airship to the other, and as there are three lobes there are therefore three cables. These cables are so interconnected by smaller ones that when the envelope is inflated the cables form a triangular funicular girder, thus ensuring to the envelope its trilobal shape. When deflated the airship is non-rigid, but when inflated the funicular girder gives the airship the qualities of the rigid type. The Astra-Torrès, therefore, combines the advantages of the non-rigid with those of the rigid type. The three lobes forming the envelope are so arranged that there are two at the bottom and one at the top. Each of the two lower lobes contains a ballonet. If for some reason the pressure of the gas is diminished during a journey the airship will not stand in danger of "breaking its back," but the two lower lobes would simply bend upwards and the envelope would assume the shape of a V. Most of the suspension ropes which support the car, and which proceed from the funicular girder, are in the interior of the envelope, and consequently offer no resistance to the motion of the airship. The new Astra-Torrès is the largest yet built of that type. As in rigid airships, it is possible to distribute the weight of the car evenly along the whole length of the vessel. The airship can be packed into a

small space and has a small "dead weight." It is deemed by the Astra Company not so much an evolution as a revolution in airship construction.

Germany: from the Parseval Company. This is said to be "PL 17," which underwent its first trials on 9th October last. It is provided with two six-cylinder Maybach motors of 160 h.p. each; has two four-bladed steel propellers, and has a lifting capacity of 6,600 lbs., in addition to its own weight. At its first speed trial it is said to have attained a speed of 42.4 miles per hour. The vessel is being delivered through Messrs. Vickers, Ltd.

Confirmation that orders had been placed in Germany was obtained from the First Lord of the Admiralty in the House of Commons on 11th December last.

FATAL ACCIDENT.—On December 15th, Lieutenant Wilfred Parke, R.N., and Mr. A. Hardwicke, manager of the Handley-Page Aeroplane Company, who was a passenger, fell from a considerable height on to the golf course at Wembley and were both killed instantaneously. The weather at the time was gusty, and apparently the machine dived to turn whilst travelling about 60 miles an hour. Running into a vacuum at the end of the dive, the machine seemed to be caught by the tail and spun round, falling to the ground in a sloping direction.

NUMBER OF ARMY BIPLANES.—In the House of Commons, on 11th December, Colonel Seely stated that 14 biplanes were in use in the Military Wing of the Royal Flying Corps, three of which were at that time under repair. Sixteen machines were on order. No machines had been ordered since September 30th, but tenders for 18 had been invited. As regards organization, steady progress was being made. One airship and kite squadron, three aeroplane squadrons, the Flying Depôt, the Headquarters Military Wing, and the Central Flying School had been formed, but the personnel of these units was not yet complete.

AEROPLANE FLIGHT.—On 3rd December, Captain J. H. W. Becke, Flight Commander of the Military Wing of the Royal Flying Corps, and Lieutenant P. L. W. Herbert, both of the Sherwood Foresters, made a flight from Aldershot to Plymouth on a Maurice Farman aeroplane. One descent only was made, for petrol, in a journey of about 160 miles.

Australia.

AUSTRALIAN FLYING CORPS.—According to the *Standard*, Lieutenants Harrison and Petre, of the Australian Military Forces, left England during the first week in December with four aeroplanes purchased by the Australian Defence Authorities at £800 each. Official sanction for the formation of the Australian Flying Corps has been given: the unit will consist of an "aeroplane squadron," and its complete personnel will comprise four officers, seven warrant officers and sergeants, and 32 mechanics, or a total of 43 men. The corps will form part of the citizen forces, and the enrolment, which will be voluntary, is to commence from 1st January, 1913.

FRANCE.

NAVAL STATIONS.—The Minister of Marine announces that four naval aviation stations will be established shortly at Bizerta, Bonifacio, Nice and Dunkirk. Also, to encourage the construction of a special naval type, a prize of £2,000 is offered for a hydroplane contest to be held at Deauville during 1913 and under the auspices of the Aero Club. The machines judged first and second will be purchased for £2,400 and £2,000 respectively.

OVER-SEA FLIGHT.—A brilliant flight was executed by the airman Garros, who started from Tunis, and, descending only at Marsala in Sicily, reached Trapani on the 18th December. On the 22nd he continued his flight and reached Rome, having covered altogether nearly 600 miles in two days.

MID-AIR COLLISION.—A collision occurred at the Villa Coublay Aerodrome between two aeroplanes, the one (a biplane) carrying the son of the Minister of Marine as a passenger, the other (a monoplane) being flown by a Siamese officer. The machines were flying at an altitude of about 100 feet, and the airmen received very severe injuries.

FIRE AT A FACTORY.—Damage estimated at £4,000 was caused by a fire at the Astra Airship Company's shed at Issy-les-Moulineaux, on 19th December. Several aeroplane engines were destroyed and three airships badly burnt. The Astra Airship Company is the firm with whom the British Admiralty has placed an order for an airship.

GERMANY.

VOLUNTEER FLYING CORPS.—The *Standard* announces that arrangements have been made through the agency of the Imperial Aero Club of Germany for the formation of a Volunteer Flying Corps. The regulations, drafted by the Aero Club, have been approved by the War Office. The corps is to be composed of Germans, who are in possession of and who can pilot an aeroplane of a pattern that is approved by the War Office. For this machine, and the promise that the member will place it and his own services at the disposal of the army in case of need, the club receives a subsidy of £150. Whilst in temporary service at the manœuvres the members receive pay at the rate of £2 a day. They are also to be insured on the basis of an income of £365 a year. It is not expected that the membership of this club will be very large, at least for the moment, as amateur aviators satisfying the conditions mentioned are fewer in Germany than in England.

It is semi-officially announced in the German Press, that the Government intends laying before the *Reichstag* supplementary army estimates for aviation purposes. The sum asked is stated to be about 18 million marks (£900,000 nearly), of which it is proposed to devote £500,000 to buying Zeppelin cruisers, the other £400,000 to airships of other approved types.

The "National Aviation Fund," on behalf of which Prince Henry of Prussia made an appeal at the Aeronautical Exhibition in April last, is now closed. The total obtained is £361,725. Over £50,000 of this total has been contributed for the purchase of flying machines which will bear the name of the town or province which subscribed for them. £28,850 has been contributed for the establishment of a German experimental station for aeronautics, and £16,914 for other definite purposes. The rest of the money is placed at the disposal of the National Committee.

FRONTIER ARREST.—A German N.C.O., in civilian dress, lost his way in the fog and had to descend in French territory, near Marnay, in the Haute Saône. The local Sous-Prefêt gave directions for the immediate arrest of the aviator and the seizure of his aeroplane, until orders should be received from headquarters.

NUMBER OF AIRSHIPS.—In the House of Commons, 4th December, in reply to a question whether, besides one new naval Zeppelin, one new

military Zeppelin, two passenger Zeppelins, and the Schütte-Lanz experimental dirigible, Germany had several other effective, if slightly slower, Zeppelin airships belonging to the army within 300 to 400 miles of the British coast, the First Lord of the Admiralty stated that he was informed that there were now two other Zeppelins belonging to the army in addition to those mentioned in the question. Of these "Z.I." was completed in 1905 and reconstructed in 1911, but he was informed that, so far as known at the Admiralty, she had not been flying recently. The other, "Z.III.," according to the German Press, was taken over by the military authorities at the end of July last.

NAVAL FLYING CORPS.—It is announced in the German Press that a special section for airships and aeronautics having been formed in the Dockyards Department of the German Admiralty, a special squadron is to be organized as airship personnel for the naval flying machines, and will be stationed at Johannisthal, the flying station near Berlin, and at Putzig, the naval flying station near Danzig. This squadron, it is said, will consist, during the present winter, of one commander, two senior naval lieutenants, three naval lieutenants, one sub-lieutenant, two naval engineers, 86 deck officers, mates, etc., and 113 ordinary seamen.

NAVAL AIRSHIP BASE AT CUXHAVEN.—A naval airship base is to be erected at Cuxhaven on the land originally stated to be destined for a range. £80,000 has been set aside in the Estimates for the purchase of the site, and rather more for the erection of a double revolving shed for the Zeppelin airships. As a nucleus of the naval aerial section, 200 officers and men are asked for in the Estimates.

UNITED STATES OF AMERICA.

LAUNCHING AEROPLANES FROM BATTLESHIPS.—According to the *Morning Post* special correspondent, Captain W. R. Chambers, U.S.N., Chief of the Navy Aviation, has invented a device for launching hydro-aeroplanes from battleships, which, it is claimed, is the first device of its kind, and successfully solves the problem of launching aeroplanes from men-of-war. Captain Chambers's device is a catapult fixed to the top of a turret, and worked by compressed air. In the trials, the aeroplane was placed in a catapult having a run way of 21 feet, and was shot forth by 300 lb. of air pressure. After the test the hydro-aeroplane was carefully examined to ascertain if it had been strained by the shock of launching, but was found to be in perfect condition. The flying machine does not return to the vessel from which it is launched, but lands in the water, and is then hoisted back to the deck. The catapult now used is too heavy, and its inventor is working to design a lighter apparatus. It is claimed that the device can be put in position on the turret in 30 minutes, and that by revolving the turret the craft can be launched into the face of the wind, regardless of the direction from which it may be blowing.

AIRCRAFT AND SUBMARINES.—Tests have been carried out in Chesapeake Bay with submarines and aeroplanes which show that, in muddy water, the naval aviators were able to locate submarines running with their periscopes just below water, the disturbance revealing the presence of the submarine. The use of binoculars made it easier to distinguish the submarines. These tests, which have until now been made in the day time, will now be made by night also.

THE WAR IN THE BALKAN PENINSULA.

(*Continued from the December* JOURNAL *page* 1740.)

(A) OPERATIONS AND MILITARY MEASURES.

Bulgarian Forces.

ATTACK ON ADRIANOPLE.—A final attempt to capture Adrianople was made by the Bulgarians before the proclamation of the armistice. A despatch from Shukri Pacha, the Turkish commandant, stated that a general assault was delivered at 9 p.m. on December 3rd against the east and west fronts and from the direction of Marash, and that the assailants were repulsed after six hours' fighting. The armistice was proclaimed on the following day.

THE ATTACK ON THE CHATALJA LINES.—A report by M. Pennenrun, special correspondent of *L'Illustration*, which appeared in that paper on December 14th, throws much light on the events between November 14th-19th. M. Pennenrun accompanied the Third Army, and his narrative therefore deals chiefly with the fighting on the left flank.

It appears that the attack was carried out by the First Army—1st, 6th, and 10th Divisions—under General Kutincheff (headquarters, Fener), and by the Third Army—3rd, 4th, 5th, and 9th Divisions—under General Dimitrieff (headquarters, Erminikeui). The latter General was in charge of the whole operations. The disposition of the troops prior to the battle is shown on the map (p. 136). As regards the Third Army, the 5th Division (General Christoff) was on the left near Belgrade, but was not to come into action at once, forming, in fact, a reserve in rear of the left; in the centre the 3rd Division (Saratoff) occupied the heights of Kalfukeui, and was to attack the salient formed by the Turkish line near Dag Yenidjekeui. The 9th Division (Serakoff) on the right of the Third Army took the place of the 4th Division (Boiadief), whose men were exhausted by the marches of the last few days, about Akalan and Subattchoujou. The 4th Division was formed up in rear of the right of the Third Army in a position corresponding to that of the 5th Division on the left, thus furnishing a total reserve of 45,000 men at the commander's disposition.

The attacking troops were assembled under cover of the range of heights extending from Kastania to Dag Yenidjekeui. The artillery, including some heavy 120 mm. howitzers, were entrenched on this position, in deep gun pits, covered by an outpost line on the crest, as early as the 14th. This ridge dominated the Turkish position on the opposite side of the valley by about 300 feet. From the point marked on the map by a cross, which was chosen for General Dimitrieff's command station, the whole field of battle was visible, from Lake Derkos on the north to the Bay of Chekmedje, in which the Turkish warships could be seen at anchor.

General Dimitrieff reconnoitred the enemy's position on the 13th, and his staff appeared confident of victory. On the 14th General Kutincheff came to Erminikeui to receive his orders. On the same day a Turkish flag of truce arrived at the outpost line, but was not received. By the evening of the 16th all the artillery targets had been selected.

THE FIGHTING ON THE 17TH.—It had been originally intended that the artillery should commence fire at daybreak on the 17th, but for some reason fire was not opened till later on in the morning.

The battle then commenced with an artillery duel, under cover of which the Bulgarian infantry advanced to the attack along the whole front. In the zone of the Third Army, the 1st Brigade of the 9th Division was given as its objective Fort VII. on the hill east of Chanakcha. Some Bulgarian infantry were seen to cross the Katarchi brook (an upper branch of the Kara Su); they were at once met with an overwhelming fire, and flung themselves down in the open, where they remained lying for hours under a hail of shrapnel. No attempt was yet made to support these troops, and the Bulgarian masses were kept carefully under cover.

The Turkish guns were firing from concealed positions behind undulations west of Karajali, and could only be detected by the flashes; they continued to search the bottom of the valley and the Bulgarian artillery positions near Kastania with their fire. It appears from the correspondent's account that neither the Bulgarian field guns, nor their 120 mm. howitzers, firing h.e. shells, ever succeeded in locating these batteries, or in appreciably reducing their fire.*

Meanwhile, on the left, a portion of the 3rd Division had made better progress; and by 10 a.m. had captured Dag Yenidjekeui. and Lazarkeui, and were preparing to issue from the latter village. This point, on the watershed between the streams flowing to the Black Sea and Sea of Marmora, is the easiest line of approach owing to the broken and wooded ground. At 2 p.m. a long line of infantry could be seen leaving the village of Lazarkeui, which had been taken at 9 a.m., and advancing in small groups towards the great fortified hill two miles to the south-east. This hill is crowned by a barracks (see "Caserne" on map); its possession would allow the attackers to enfilade the whole Turkish position. The Turkish artillery fire broke out vigorously all round this hill; their shrapnel rained in the valley which ascends eastwards from Lazarkeui. The Bulgarian infantry was again brought to a standstill; their artillery appeared to be searching for the Turkish batteries without being able to silence them.* It was now 5 p.m., and night was falling; the Bulgarians had occupied the foot of the eastern slopes with their skirmishers, who were dug in a few hundred yards from the Turkish trenches. Their artillery, which appeared to have given their infantry only half-hearted support, had long ago ceased fire, apparently content with having made the enemy disclose his positions.

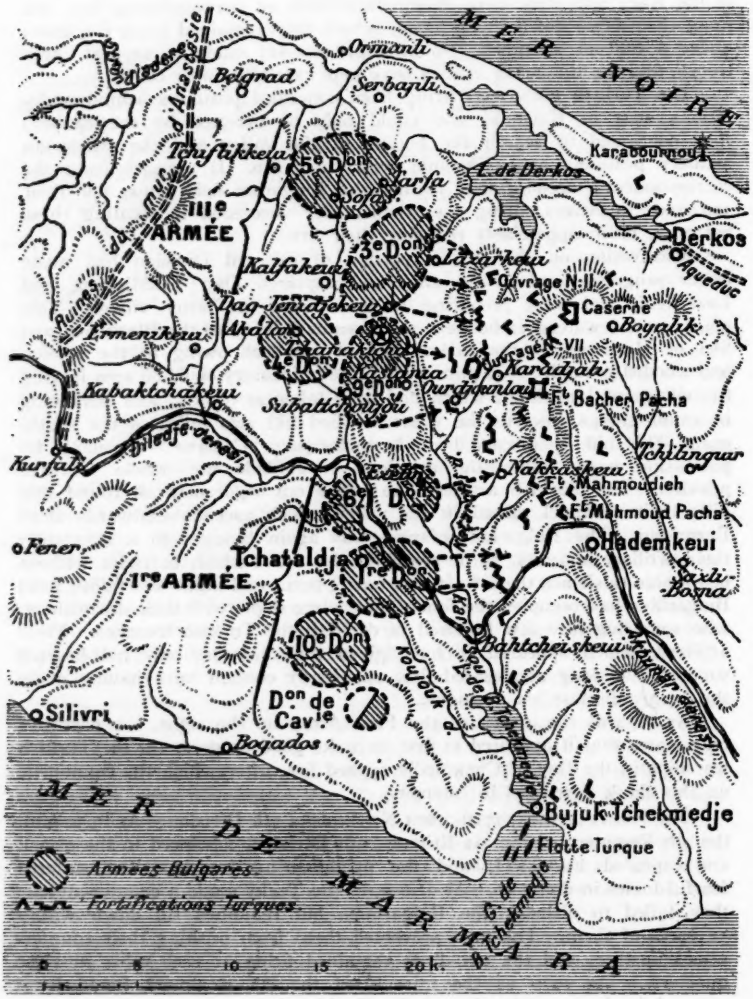
As regards the attack of the First Army on the right, the narrative only states that it appeared at first to make good progress till the Turkish warships in the Bay of Chekmedje opened fire, after which the cannonade on this flank decreased in intensity.

THE NIGHT ATTACK, 17TH- 18TH NOVEMBER: *9th Division.*—At 10.30 p.m. the 4th Regiment of the 1st Brigade, 9th Division, advanced to the attack and captured Fort VII. and the neighbouring trenches, but suffered fearful losses in doing so. At 2.30 a.m. the Turks made a counter-attack; they failed to dislodge the Bulgarians, but remained till dawn within 50 yards of them. The mist prevented them from pushing their counter-attack further, and the two lines remained firing at each other at close quarters. As soon as the mist lifted the 4th Regiment found itself exposed in front to the fire of the Turkish infantry, while its left was enfiladed by the Turkish artillery. The regiment had lost its colonel and a large number of officers, and now gave way in disorder, carrying with it part of the 17th Regiment. The Turkish shrapnel followed them down into the valley and up the western slope under the eyes of General

* Cf., Major Budworth's remarks on page 76.—Ed.

SKETCH OF THE BATTLE OF CHATALJA, 17TH, 18TH AND 19TH NOVEMBER.

[Reproduced from *L'Illustration*, 14th December, 1912.]



Point from which the Correspondent of *L'Illustration* watched the Battle.

Dimitrieff's staff. A brigade of the 4th Division, hitherto kept in reserve, was now thrown in and restored the situation by again advancing against Fort VII.

3rd Division.—Like the 9th Division on its right, the 3rd Division also made a night attack, and captured some Turkish trenches in the middle of a wood. A battalion of the 29th Regiment even penetrated Fort II.—an infantry redoubt surrounded with barbed wire. A bayonet combat took place between this battalion and two Turkish companies forming the garrison; the Bulgarians were successful, but for some reason they were not supported. After a time they ran short of ammunition, and being threatened by a strong Turkish counter-attack, they had to retire at the moment that the mist lifted.

The correspondent of *L'Illustration* gathered, though it was not definitely stated, that by a mistake the Bulgarian guns had fired on their own infantry during the retreat; this caused some disorder in the 3rd Division, which, however, re-occupied its positions of the day before. The retreat of the 29th Regiment coincided with that of the 4th Regiment in the zone of the 9th Division.

The Bulgarian losses were heavy, some companies, it was said, had lost all their officers and N.C.O.'s, while one company of the 29th was reduced to 14 men.

NOVEMBER 19TH.—On November 19th the artillery duel continued, and numbers of wounded kept coming in from the front. General Dimitrieff was at his staff office at Erminikeui, not on the hill east of Akalan. The staff showed evident signs of disappointment with the result of the fighting, and the correspondents were informed that owing to the extraordinary ravages made by dysentery in the Bulgarian ranks, operations would now have to be suspended. M. Pennenrun states that three Bulgarian divisions, say 60,000, had still not been engaged, and he attributes the failure of the Bulgarians to persevere in the attack to the utter exhaustion of their troops.

* * * * * * * * * * *

The report quoted in last month's JOURNAL that the bulk of the Bulgarian forces were withdrawn west of Chorlu after the attack on the Chatalja Lines, was incorrect. The dispositions of the Bulgarian troops at the end of December are believed to have been as follows:—

FIRST ARMY.—General Kutincheff: 1st, 6th and 10th Divisions, on the right of the Bulgarian force facing Chatalja. The 10th Division was composed of one brigade of the 1st Division and one of the 6th.

SECOND ARMY.—General Ivanoff: 8th and 11th Divisions, investing Adrianople. The 11th Division consists of one brigade of the 9th Division and two brigades of *opolchenie*. There were two Servian Divisions with the Bulgarians before Adrianople.

THIRD ARMY.—General Dimitrieff: 3rd, 4th, 5th and 9th Divisions. On the left of the First Army before Chatalja.

2nd Division was reported to be somewhere east of Demotika.

7th Division arrived at Dedeagach from Salonica on December 1st. It was believed to be with the 2nd Division.

The Bulgarian losses up to and including the battle of Chatalja are estimated at 80,000 killed and wounded.

FINANCIAL.—In introducing the Budget, the Finance Minister told the Sobranje that beside the three million pounds voted in September, and the two million now asked for, a further sum of six million would be required to meet the requisition notes issued. All these credits would be covered by a loan after the war. The condition of the treasury was satisfactory, and the war could be continued for six months if necessary. The moratorium has been prolonged, and is to continue until one month after demobilization.

COMMUNICATIONS.—The trans-Balkan Tirnovo—Stara Zagora railway it not yet open to traffic.

THE SECRET OF BULGARIAN SUCCESS.—In his address to the cadets at the Royal Military College on December 18th the Chief of the Imperial General Staff is reported to have said :—

"The extraordinary and almost unparalleled success of the Bulgarian Army was due in a very large measure to the superiority and the excellence of its leaders. What did that superiority consist of? In the first instance, of the ability and the devotion which they displayed to the training and instruction of their men for war during peace time, and, secondly, in their skill. As regards the first, I remember some years ago I was travelling through the Balkans, and by the kindness and courtesy of the Bulgarian Staff I saw a great deal of what went on. One saw the same thing everywhere—hard, energetic work to prepare for that great war which they knew to be impending. The work was carried on from week end to week end, by day and by night, from year to year. There was never any falling off, and no sort of slackness was shown. The leaders, from the highest to the lowest, were impressed by that one love of country and a determination to succeed when the time came, and with the absolute knowledge that the time would come and that the work they were doing then would absolutely decide whether they were to be successful or not. And so the time went on, and at last the opportunity came, and you all know what happened. Again, as to their skill, the Bulgarian officers were taught and impressed from the very first that whatever positions they held they were simply parts of a great machine, and that whether they were smaller or greater parts of that machine, whether they were leaders, whether they had to train half a company, or a squadron of cavalry, or a couple of guns, their work was just as important as that of the commander of an army corps."

Servian Forces.

DISTRIBUTION OF TROOPS: FIRST ARMY.—On November 29th, the following movements were commenced by the troops of the First Servian Army :—

1st Division: 1st *Ban* from Kristofar (south of Monastir) to Monastir. A detachment to Resna.

1st Division: 2nd *Ban* from Resna to Elbassan.

2nd Division: 1st *Ban* from Klestina (three miles north of Florina) to Keupruli.

3rd Division: 1st *Ban* from Dobromir to Uskub.

5th Division: 2nd *Ban* from Orizari (half mile north-east of Monastir) to Prilep.

Cavalry Division from Kenali (south-east of Monastir) to Uskub.

After November 29th, the Servians abandoned the pursuit of the Turks, retreating southwards from Monastir. The pursuit was continued by the Greeks.

SECOND ARMY.—The Second Army, consisting of the 5th Division of the 1st *Ban*, and the 3rd Division of the 2nd *Ban*, formed part of the investing force round Adrianople.

THIRD ARMY.—The Third Army consists of the 4th Division of the 1st *Ban*, 2nd Division of the 2nd *Ban*, and an independent mixed brigade. It occupied Durazzo on November 27th and Dibra on November 28th. Headquarters are at Prisrend.

FOURTH OR IBAR ARMY.—The Ibar Army consists of the 4th Division of the 2nd *Ban* and an independent mixed brigade. At the end of December it was concentrated in the Sanjak of Novibazar, near Sienitsa.

The *Temps* of December 28th announces the formation of a new military divisional district, to be called the Vardar division, with headquarters at Uskub.

Greek Forces.

MAIN ARMY.—After the defeat of the Turkish Western Army at Monastir on November 19th the Main Greek Army continued its adavnce towards Yanina. At the beginning of December the 3rd Greek Division left Kastoria, while the 5th and 6th Divisions started from the neighbourhood of Florina, all moving on Koritsa (Gurije), a town of 18,000 inhabitants. On or about December 16th, the Turks under Djavid Pacha, 15,000-20,000 strong, attacked the Greek advanced troops at Biklista, and then withdrew to a position on the Morava Planina and in the Zangoni Pass. The Greeks, under General Damianos, attacked on December 19th, and drove the Turks partly westwards and partly towards Yanina, capturing three guns and 200 prisoners. Koritsa was occupied on December 20th. The pursuit was then continued, in spite of the severe weather, to the defile of Kiari, where the Turks were again defeated, and thence towards Liaskoviki.

WESTERN ARMY.—Reports as to the operations against Yanina during the early part of December were very contradictory. General Sapuntsakis' force has been advancing from the south and south-west. The garrison of Yanina, according to the latest reports, is between 35,000 and 55,000 strong. Of these about 20,000, under Ali Riza Pacha, had retreated from Monastir. About December 10th an attack was made on the Turkish position near Yanina, while a force of two battalions was landed at Santa Quaranta to effect a diversion. This detachment was re-embarked after an encounter with eight Turkish battalions west of Yanina.

On December 20th, 21st and 22nd, the Turks attacked the Greeks, who were holding a position from Dodona (on the left), seven and a half miles south-west of Yanina, to Kritovo. These attacks were repulsed. Fresh fighting was reported on December 24th and 25th.

Montenegrin Forces.

SIEGE OF SCUTARI.—The armistice was not recognized by Hassan Riza Pacha, Governor of Scutari, and hostilities continued during the peace conference. According to *Danzer's Armee Zeitung* the garrison recaptured several important positions, and on December 10th effected a sortie, causing severe loss to the besiegers, who were reinforced by seven Servian battalions from Alessio.

(B) Naval Operations.

As Greece was not a party to the armistice, maritime operations were continued during the peace conference. Public opinion in Constantinople demanded that a blow should be struck at the Greek squadron blockading the Dardanelles. Accordingly the Turkish fleet, consisting of four battleships and cruisers, nine destroyers and six torpedo boats, issued from the Straits at 9.30 a.m. on December 16th. The following account, from Greek sources, of the skirmish which followed, appeared in the *Times* of January 3rd :—

"The small craft remained in the Straits, and the four larger ships came out of the Straits and, keeping close to the land, turned towards the north. The Greek fleet, also consisting of four armoured ships, coming from the island of Imbros, steered in a north-easterly direction so as to cut across the course of the Turks. The 'Averoff,' having superior speed, went on ahead, and the remaining three ships formed line abreast and waited for the enemy to come up. At 9.50 a.m. the Turkish ships opened fire at a range of about 15,000 yards. At 10 a.m. the Greek fleet opened fire at a range of about 8,500 yards. At 10.4 a.m. the Turkish fleet altered course 16 points and returned as fast as possible, and in broken formation, to the Straits, which they entered about 10.30 a.m. Thus the total time during which either fleet was under fire did not exceed half an hour, and probably was only about 20 minutes. The torpedo craft took no part in the action, which merely resolved itself into a skirmish and was probably carried out in order to appease public opinion in Constantinople.

"The following damage was sustained by the Turkish ships during the brief period of fire:—1. 'Barbarossa' had one turret put out of action. 2. 'Barbarossa's' bridge was totally wrecked by the enemy's fire. 3. 'Barbarossa' had her boilers damaged, and a fire started in one of her coal bunkers. 4. 'Messudieh' and 'Torgut' showed marks of shell hits in the after part, but no accurate details of the results of these hits are known. 5. The total casualties in the Turkish fleet were 58.

"The casualties in the Greek fleet were one killed and seven wounded, all on board the 'Averoff,' and all were men who were stationed on the bridges.

"The 'Averoff' received two shell hits on the superstructure near the foremost funnel. None of her guns were damaged or put out of action."

On the other hand, the Turks maintain that the "Barbarossa" was only slightly damaged, that they lost only eight men, and that the "Averoff" was seriously injured by shell fire. The important point is that the blockade was not raised.

Another similar skirmish took place on January 4th. A Reuter's despatch of the 5th gives the Greek official version as follows:—

"Greek destroyers cruising off the Straits reported at half-past seven this morning that two Turkish cruisers, followed by six destroyers, had been sighted at the entrance to the Dardanelles. The whole Greek squadron immediately weighed anchor and steamed to engage the enemy.

"At 25 minutes past ten the cruiser 'Medjidieh' detached herself from the other Turkish vessels, which kept within the protection of the Sedelbahr forts, and steamed to the west of Tenedos. She fired six or seven shells on two of the Greek destroyers cruising in these waters. The destroyers replied, but the Turkish cruiser, on perceiving that other

Greek destroyers were coming up, retired to the Straits. An hour later the 'Medjidieh' and the 'Hamidieh' once more separated from the rest of the Turkish fleet, which remained in front of the Straits, and advanced to the west of Tenedos. For half an hour an exchange of shots was maintained between these two vessels and the Greek destroyers. The two Turkish cruisers were followed up to a certain point by the destroyers. The engagement was brought to a conclusion by the flight of the enemy's ships into the Straits as soon as the whole Greek squadron appeared on the horizon."

AEGEAN ISLANDS.—The Turkish garrison of Mitylene, some 1,800 strong, surrendered about December 22nd; the garrison of Chios, 1,700, with two guns, held out till about January 2nd, when it surrendered, after some fighting with the Greek troops.

LOSSES.—The Greek losses are said to have been about 15,000 men killed and wounded up to December 19th.

EPIRUS COAST.—At the beginning of December, Greek warships are said to have fired on Valona and occupied the island of Sasseno, evoking a protest from the "Provisional Albanian Government."

NOTICES OF BOOKS.

The Evolution of Sea-Power. By P. A. Silburn, D.S.O., Member of the Parliament of the Union of South Africa. Longmans, Green & Co. London, 1912.

It is to be hoped that Mr. Silburn's book will be widely read, amongst laymen even more than amongst members of the Services. In these days of democracy, when the composition and actions of a Government are largely dependent on popular feeling, and when, unfortunately, a certain class exists which regards with distaste the growing expenditure on armaments, any work which endeavours to educate the people to an understanding of the absolute necessity of the retention of the command of the sea by the British Empire is to be welcomed. Mr. Silburn traces the growth and decay of the sea-power of nations from that of the Phœnicians—the earliest maritime race—to the present day, and is able to demonstrate the absolute influence for supremacy which sea-power has invariably exerted in both war and commerce. He points out the historical fact that its acquisition has always been a preliminary to the rise and prosperity of a nation, that the neglect of its principles has been in all cases followed by disaster and often by decay, and that, as a rule, military power on land alone is by itself ineffective, and most decisive battles on shore have been made possible only by the possession of command of the sea. From the fall of Carthage to the collapse of Spain; from the Napoleonic wars to the recent conflict between Russia and Japan, the lesson is the same; and since Mr. Silburn's book was written, the principle has once more been illustrated by the impotence of Turkey in Tripoli in the face of Italian naval power. But it is not only in war and the prevention of war that sea-power is important. The spread of civilization through commerce and intercourse by sea is shown to have been infinitely more rapid than the slow progress by land which preceded the rise of the maritime race of Phœnicia.

The most striking lessons to our own nation are contained in the chapters on "Government and Sea-Power" and "The Nation and Sea-Power." Mr. Silburn has the courage to point out the fatal influences of the democracies of the past on this vital matter, and the dangers of allowing the Navy to become a question of party politics. History is full of warnings. Carthage, Venice, and Holland are examples.

"The sea-power of Holland deteriorated in proportion to the spread of democracy, and as the people devoted their attention more and more to the acquisition of personal wealth, so did their interest in sea-power slacken. Sea-power is based upon a strong, efficient, and highly disciplined Navy; therefore, its most powerful solvent is democracy; for whilst sea-power is founded upon discipline, democracy is founded on the negation of discipline; where all want to command, none are found to obey."

This is an unpalatable truth in the conditions of the present day. But Mr. Silburn, though he utters necessary warnings in measured language, is not a pessimist. He does not make the common mistake of exaggerating the value of *matériel* to the neglect of *personnel*. While deprecating the creation by Australia of a local navy, which he considers to be a mistaken policy, he hopes for the realization by the British overseas Dominions of the fact that the security of their trade, which is their very existence, is dependent on the supremacy of the British Navy, and for their support for British sea-power—a state of affairs which, happily, shows every sign of becoming an accomplished fact.—J.T.T.

IMPORTANT NAVAL AND MILITARY LITERATURE.

NAVAL.

[*A selected list of books added to the Admiralty Library during November, 1912, supplied by courtesy of the Admiralty Librarian.*]

15,000 MILES IN A KETCH. By Captain Raymond Rallier du Baty. London, 1912.

SHIPMATES. By A. E. Loane. London, 1912.

ALL ABOUT SHIPS. By Lieut. Taprell Dorling, R.N. London, 1912.

SAILING AND FIGHTING INSTRUCTIONS FOR HIS MAJESTY'S FLEET. Circa, 1730.

THE ROYAL AUSTRALIAN NAVY: WHY IT IS NEEDED. WHAT IT IS: WHAT IT WILL BE. With an introduction by his Excellency Admiral Sir George King-Hall, K.C.B., C.-in-C. Australian Squadron Royal Navy, 1912. Sydney, 1912.

THE ESSENTIALS OF INTERNATIONAL PUBLIC LAW. By Amos S. Hershey. New York, 1912.

STEAMSHIP CONQUEST OF THE WORLD. By Frederick A. Talbot. London, 1912.

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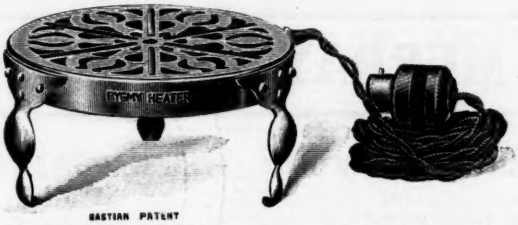

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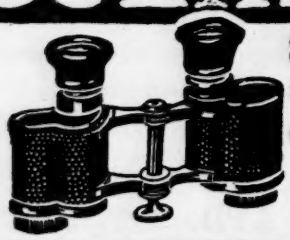

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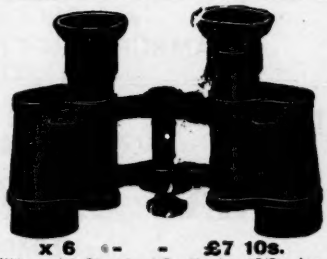

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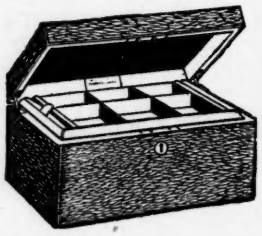

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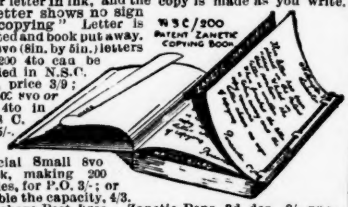

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